104

PROPOSED AMENDMENTS TO THE METRIC SYSTEM CONVERSION ACT

Y 4. SCI 2: 104/50

Proposed Amendments to the Metric S...

HEARING

BEFORE THE

SUBCOMMITTEE ON TECHNOLOGY

OF THE

COMMITTEE ON SCIENCE

U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTH CONGRESS

SECOND SESSION

MAY 16, 1996

[No. 50]

Printed for the use of the Committee on Science

DEPOSITORY

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*Ranking Minority Member
**Vice Chairman

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PROPOSED AMENDMENTS TO METRIC SYSTEM CONVERSION ACT

THURSDAY, MAY 16, 1996

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON SCIENCE,
SUBCOMMITTEE ON TECHNOLOGY,
Washington, DC.

The Subcommittee met at 10:13 a.m., in Room 2318 of the Rayburn House Office Building, the Honorable Constance A. Morella, Chairwoman of the Subcommittee, presiding.

Mrs. MORELLA. The Technology Subcommittee will now commence.

We have a hearing today on proposed amendments to the Metric Conversion Act.

The United States remains the only major industrialized country which does not predominantly use metric as a standard measurement system. While the rest of the world is using meters, grams, and degrees Celsius, the United States is solely using inches, pounds and degrees Fahrenheit.

As a result, in response to concerns about our nation's industrial competitiveness in world markets, the Omnibus Trade and Competitiveness Act of 1988 amended the Metric Conversion Act of 1975 by designating the metric system as "the preferred system of weights and measures for United States trade and commerce," direct quote.

Consequently, the Amended Metric Conversion Act requires all federal agencies to use the metric system in procurements, grants, and other business-related activities, except when such use is impractical or likely to cause significant cost, inefficiencies or loss of markets to United States industries.

While there appears to be a built-in flexibility in the current law to account for adverse economic impact, there is a concern that such flexibility is not being implemented administratively.

So in response to these concerns, our first witness today, our colleague, Congressman Chris Cox, introduced H.R. 2779, the Savings in Construction Act.

Congressman Cox's bill attempts to promote flexibility by providing soft metric conversion in construction metrication instead of hard metric measurements, which are in round metric units.

As the Chair of this Subcommittee which has jurisdiction over our technology and competitiveness policy, I am a strong supporter of promoting the use of metric.

And I am bringing this plate, which was authorized in Arizona for the metric system commemoration.

And I do believe that rolling back our current metric efforts is unwise and would only serve to ultimately impair our nation's long-term international competitiveness.

I do understand, however, the need for flexibility in the implementation of our current metric law. I am also aware of the desire for various construction industries to discuss less costly and less intrusive ways of meeting the goals of the Metric Conversion Act.

I applaud Congressman Cox for his leadership in attempting to address this issue. I welcome our witnesses. I'm looking forward to the testimony of industry, government and metric panels as we discuss H.R. 2779.

And I really think this hearing will be useful as we review the need for flexibility in construction metrication.

And so I would now turn over for any opening statements, the time to Congressman Brown, who is the Ranking Member of the Full Science Committee.

Mr. BROWN. Thank you very much, Madam Chair, and I apologize that our own Subcommittee Ranking Member is not here. Since I'm willing to take up his time, you may dock him when he comes in and not allow him to speak.

[Laughter.]

I'm reminded that we began our work on metric conversion back in the 1960s. I was reminded of that by one of our distinguished senior former staff members, Mr. John Homfeld, who is here this morning. He told me that his first assignment from the then-chairman, who is another Californian, Chairman Miller of California, was to start the process of developing the legislation on metric.

And that continues, of course, for the next 27 years. We're still working on it.

Madam Chair, I would also like to join you in welcoming Congressman Cox as a witness before the Subcommittee. I'd like to say at the outset that Congressman Cox had done a service to the block and lighting industry in bringing forward the concerns that are the basis for his bill.

I do not think that there's a member of this panel, regardless of their feeling about the metric system, that wants small businessmen to bear unnecessary financial burdens as our nation converts to metric.

We are united in our commitment to solve the problems, which will be presented by the industry in the second panel.

In 1987, when this Committee wrote the language now in question, the context was trade. The United States had become the only industrialized nation that was not converting to metric. We could not expect U.S. companies to compete in world trade as the odd person out.

We worked closely in a bipartisan manner with the Reagan administration to develop flexible metric conversion language.

Our former Republican colleague, Manuel Lujan, and I cosponsored an amendment which allowed exceptions to metric conversion when it did not make economic sense. We also increased flexibility by not establishing a statutory deadline for the completion of conversion.

This approach has worked, for the most part. In most instances, there have been no measurable adverse economic impacts to the

government contractors or increased cost to the government as the conversion has moved forward.

The problems we will hear today can be solved through the exception route as well. We can meet the needs of these industries without abandoning our overall goals.

That is why so many members of the Committee wrote the Commerce Department and asked them to get involved.

I understand from my conversations with Undersecretary Good that her department is committed to solving these problems, as evidenced by its promulgation of a Federal Register notice, its conversations with the Office of Management and Budget, and its discussions with affected agencies all during the past two months.

While we are sympathetic to Mr. Cox's diagnosis of the problem, neither the Administration nor I can agree to his specific solution.

And at this point, I request that OMB's letter of opposition to H.R. 2779 be inserted in the hearing record.

Mrs. MORELLA. If there's no objection, it will be so ordered.

[The prepared statement of Mr. Brown and the letter referred to follow:]

STATEMENT OF THE HONORABLE GEORGE E. BROWN, JR.

METRIC LEGISLATIVE HEARING

MAY 16, 1996

I also would like to welcome Congressman Cox as a witness before this subcommittee. I would like to say at the outset that you have done a service to the block and lighting industry in bringing forward the concerns that are the basis for his bill HR 2779. I do not think that there is a Member of this panel, regardless of his or her feelings about the metric system of measurement, that wants small businessmen to bear unnecessary financial burdens as our nation converts to metric. We are united in our commitment to solve the problems which will be presented on today's second panel.

In 1987, when this Committee wrote the language now in question, the context was trade. The United States had become the only industrialized nation that was not converting to metric. We could not expect US companies to compete in world trade as the odd person out. We worked closely in a bipartisan manner with the Reagan Administration to develop flexible metric conversion language. Our former Republican colleague Manuel Lujan and I cosponsored an amendment which allowed exceptions to metric conversion when it did not make economic sense. We also increased flexibility by not establishing a statutory deadline for the completion of metric conversion.

This flexible approach has worked for the most part. In most instances, there have been no measurable economic impacts to government contractors or increased costs to the government as the conversion has moved forward.

The problems we will hear today can be solved through the exception route as well. We can meet the needs of these industries without abandoning overall goals. That is why so many Members of this Committee wrote the Commerce Department and asked them to get involved. I understand from my conversations with Under Secretary Good that her Department is committed to solving these problems as evidenced by its promulgation of a Federal Register notice, its conversations with the Office of Management and Budget, and its discussions with affected agencies, all during the past two months.

While we are sympathetic to Mr. Cox's diagnosis of the problem, neither the Administration nor I can agree to his specific solution. At this point I request that OMB's letter of opposition to HR 2779 be inserted in the hearing record. Let me explain our major concerns.

1. The bill is much more complicated than it needs to be. It is not a simple correction and does not belong on the Corrections Calendar in its present form. It uses several pages of legislative language when at most a simple exception to existing policy is needed.

2. The bill departs significantly from existing Federal procurement and metric policy. It uses non-traditional definitions which may need judicial interpretation. It establishes unique precedents and procedures in procurement law with unknown ramifications, and it inadvertently runs afoul of customary business practices in government contracting and subcontracting.

3. The bill places a heavy bureaucratic burden on each Federal agency doing construction and requires the formation of a complicated structure of advisory committees for each of the many industries supplying product to federal construction projects.

4. The bill does damage to the cause of metric conversion begun during the Reagan and Bush Administrations.

5. We fear that the bill will not give companies immediate relief. Regulations and conflict of interest protections would have to be put into place before the official industry representatives can be appointed.

6. The bill could put at risk trade associations and private companies who choose to serve as official industry representatives. We all know federal construction involves a great deal of litigation. These associations and companies would be performing a government-type function without the benefit of sovereign immunity. We worry about the possibility of lawsuits either from within their industry by other contractors who suffer economic loss from delays caused by the decision whether or not to use metric in a specific project.

We are now clearly at a crossroads. The Republican majority can ram the current version of this legislation through the House, pretending to solve our witness' problems, running the risk of Senate opposition and delay or a Presidential veto. Alternatively, we can work together.

I clearly prefer the second alternative, and in that spirit ask Congressman Cox and the second panel to consider how far what the Administration is offering goes to solving your problem. If it needs work, can the problem be solved administratively? If a legislative fix is still necessary, let's develop a simple, non-controversial one with bipartisan support that can sail through the Congress and can be signed by the President. I'm sure a win-win situation is within our grasp and I would like to commit to working expeditiously towards that solution.

EXECUTIVE OFFICE OF THE PRESIDENT,
OFFICE OF MANAGEMENT AND BUDGET,
Washington, DC 20503

Honorable Robert S. Walker,
Chairman,
Committee on Science,
U.S. House of Representatives,
Washington, DC 20515-6301

DEAR MR. CHAIRMAN:

I am writing to express the Administration's views on H.R. 2779, the "Savings in Construction Act of 1995", which would prohibit the Federal government from specifying the use of metric products in Federal construction contracts and federally assisted construction contracts if certain certifications are made by affected industry representatives. The Administration opposes H.R. 2779 because of the burdens it would impose upon the Federal procurement process and the negative effect it would have on the use of the metric system in Federal procurement. The Administration believes that this bill would increase bureaucratic inefficiency and paperwork by requiring each agency to prepare and annually update a list of appropriate representatives for each affected industry. Those representatives would be authorized by H.R. 2779 to make certifications regarding the availability of metric products from domestic manufacturers, the level of production of "hard-metric" products by affected industries, and the estimated cost and hardship that small business manufacturers would incur in converting to production of hard-metric products. Agencies would be prohibited from specifying the use of metric products in Federal construction contracts and federally assisted construction contracts if a designated representative for the affected industry certifies that "hard-metric" products are not readily available from domestic manufacturers or that affected small business manufacturers would encounter special hardship.

Federal law and Administration policy both encourage use of the metric system to promote U.S. competitive advantage in international markets. H.R. 2779 would severely curtail agencies' ability to comply with applicable provisions of the Metric Conversion Act of 1975, the Omnibus Trade and Competitiveness Act of 1988, E.O.

12770 (July 1991), "Metric Usage in Federal Government Programs," and OMB Circular A-119, Federal Participation in the Development and Use of Voluntary Standards." Moreover, H.R. 2779 is unnecessary, because current Federal law already provides flexibility in the use of metric standards by exempting the use of metric measurements where such use is impractical or is likely to cause significant inefficiencies or loss of markets for U.S. firms. It is certainly not the Administration's intent to unduly burden American firms in this area, but instead to pursue metrication for increased cost-effectiveness for American business, efficiency in procurement, and greater access to international markets.

The Administration is acutely aware that this endeavor requires a close partnership between industry and government. Both the public and private sectors are working to resolve building product metrication issues through the Construction Metrication Council of the National Institute of Building Sciences. The Institute is a private, nonprofit organization created by Congress to serve as an authoritative source on issues of building science and technology. With broad public and private sector participation and support, the Construction Metrication Council develops guidelines and recommends procedures to adopt the metric system of measurement as a means of increasing the international competitiveness, productivity, and quality of the U.S. construction industry. The Council works closely with the Interagency Council on Metric Policy to disseminate this information to the Federal agencies.

Congress and the Administration can be equally proud of the bipartisan support and cooperation for procurement reform evidenced in passage of the Federal Acquisition Streamlining Act of 1994 and the Federal Acquisition Reform Act of 1996. The level of micro management contemplated by H.R. 2779 runs counter to those significant efforts. One can imagine the bureaucratic burdens imposed on agencies as they attempt to choose appropriate industry representatives from the scores of affected industry associations and the hundreds of products used in construction, evaluate the certifications, and resolve the inevitable challenges thereto by dissenting manufacturers. These burdens also run counter to the progress made in encouraging the use of the metric system to promote U.S. competitive advantage in international markets. In sum, the Administration does not think it is necessary or appropriate to impose the type of bureaucratic inefficiency and paperwork contemplated by H.R. 2779 on the Federal procurement process.

Very truly yours,

STEVEN KELMAN, *Administrator*

[Identical letter sent to the Chairman of the House Government Reform and Oversight Committee]

cc:
Honorable George Brown
Honorable Cardiss Collins
Honorable Constance Morella
Honorable John Tanner

Mr. BROWN. Now let me explain our major concerns.

The bill is much more complicated than it needs to be. It's not a simple correction and does not belong on the corrections calendar in its present form.

It uses several pages of legislative language when, at most, a simple exception to existing policy is needed.

The bill departs significantly—second point—from existing federal procurement and metric policy. It uses nontraditional definitions which may need judicial interpretation. It establishes unique precedents and procedures in procurement law with unknown ramifications. And it inadvertently runs afoul of customary business practices in government contracting and subcontracting.

Number three, the bill places a heavy bureaucratic burden on each federal agency during construction and requires the formation of a complicated structure of advisory committees for each of the many industries supplying product for federal construction projects.

Number four, the bill does damage to the cause of metric conversion begun during the Reagan and Bush administrations.

And I have a couple of other points which I'll put in the record.

We are now clearly at a crossroads. The Republican Majority can put the current version of this legislation through the House, pretending to solve our witnesses' problems and running the risk of Senate opposition and delay, or a presidential veto.

Alternatively, we can work together to solve the problem, and I clearly prefer the second alternative, and in that spirit, ask Congressman Cox and the second panel to consider how far what the Administration is offering goes to solving your problem.

If it needs work, can we perfect this administrative solution? If a legislative fix is still necessary, let's develop a simple, noncontroversial one with bipartisan support. It can sail through the Congress or even be attached to some other vehicle already sailing through the Congress, and it can be then approved by the President.

I'm sure a win-win situation is within our grasp, and I would like to commit personally to working expeditiously towards that solution.

And I thank the Chair for allowing me this extended period of time.

Mrs. MORELLA. Thank you, Mr. Brown, a very thoughtful analysis.

I'm pleased to recognize the Vice Chair of the Subcommittee, Mr. Calvert.

Mr. CALVERT. Thank you, Madam Chairwoman.

I'm a cosponsor of H.R. 2779, introduced by my good friend, colleague, and neighbor from the State of California, Chris Cox.

H.R. 2779, the Saving in Construction Act, seeks to prevent federal agencies from implementing a hard metric requirement for federal construction projects in cases where a hard metric product is not readily available.

Or B, small businesses would incur significant cost to retool their production facilities.

Or lastly, competition in bidding for federal contracts would be significantly reduced.

Soft metric conversion requires that building materials be measured in metric units. Hard metric conversion requires that building materials themselves be manufactured in round metric dimensions.

In many cases, this would require plants manufacturing construction materials to retool their production facilities to produce a product that is in no way improved, merely a slightly different dimension.

In the construction industry, virtually no domestic U.S. manufacturers today now produce hard metric products. Only Canadian and other foreign firms have the production capacity to produce significant hard metric product.

H.R. 2779 would put teeth into the Metric Conversion Act's impractical, inefficient loss of market's limitation by providing a mechanism by which a soft metric standard could be substituted when problems arise.

It does not seek to prevent metric conversion for federal products, merely to clarify the law to more closely pursue its intent, providing for the most efficient and least costly conversion possible.

Though introduced only a few months ago, H.R. 2779 has already gathered 73 cosponsors of a bipartisan nature, 61 Republicans and 12 Democrats.

The Clinton Administration has also called for similar reforms on this issue. Vice President Gore's National Performance Review recommended that federal agencies avoid government-unique products and requirements due to excessive expense and delays.

H.R. 2779 will do just that—eliminating a government-unique hard metric product requirement in federal construction projects, reducing costs by an estimated 15 to 20 percent.

I would like to thank you, Chairwoman Morella, for holding this hearing today and I wish to welcome my friend and colleague, Chris Cox, and the panelists today, and look forward to listening to their testimony.

Mrs. MORELLA. Thank you, Mr. Calvert.

I'd like to now recognize Congressman Ehlers, who is not a member of this Subcommittee, but who feels so strongly about these issues and brings expertise to them, for any opening comments he may have.

Mr. EHLERS. Thank you, Madam Chair. I will be very brief.I simply want to point out that I believe the nation made a major mistake back when Thomas Jefferson suggested going to the metric system and the Congress voted not to because the cost would be too great.

At that time, I believe it was $7 million.

Our nation has lost far, far more than that $7 million over the course of our history because of our inability to compete for certain products internationally. The longer we wait, the more difficult it becomes. And yet, we always hear the refrain every time that we can't do it now. It's too expensive.

I'm not a hard-liner in the sense that I think it has to be done immediately in every area. It depends on the area. But clearly, our nation has lagged. It's only our dominance of world trade that has allowed us to get by with using a very difficult system of units for so long.

Eventually, the change is going to come, and I think we have to continue our efforts to make that change as rapidly as possible.

I'm trying to keep an open mind in listening to some of the testimony today. Unfortunately, I have another committee starting shortly, so I won't be able to stay for all of it. But I will read it.

I just wanted to get on the record my concern that we continue as a nation on our path to metrication as rapidly as we can in every sense.

I notice here, for example, the construction masonry industry is worried about the cost of replacing molds to meet the hard metric standard. I can certainly understand some relief on that score.

But the other question is, when the molds are going to be replaced, anyway, what is the possibility of the industry replacing their molds with metric molds and producing both products?

Eventually, we will be going in that direction

We have a long ways to go. It's a difficult problem. But as I pointed out, the longer we wait, the more expensive it gets, the more trade we lose internationally. It's hampered us tremendously in the past.

Fortunately, our manufacturing industries are now going metric voluntarily, just in order to sell their products in other countries.

I think that change is going to continue to happen. But we as a nation have to make that change at some point.

Thank you very much.

Mrs. MORELLA. Thank you, Mr. Ehlers.

And now we welcome the Honorable Christopher Cox, colleague from Congress. I think you all know that we welcome you here.

So thank you and now you may proceed with any testimony or comments about your bill.

STATEMENT OF THE HONORABLE CHRISTOPHER COX, A REPRESENTATIVE IN CONGRESS FROM THE 47TH CONGRESSIONAL DISTRICT OF THE STATE OF CALIFORNIA

Mr. COX. Thank you very much, Madam Chairwoman. And thank you to the other members of the panel for your comments before we begin discussion of this legislation.

Congress hasn't addressed the state of metrication in eight years. And since some tough but tractable problems, as Congressman Brown has pointed out, have recently become apparent, it's a particularly appropriate time now to have this hearing and to have this review.

So I commend you and the members of this Committee for your foresight and diligence in ensuring that the process of converting to the metric system continues to run smoothly.

I appear today as a strong supporter of converting America to the metric system. Not all of our colleagues agree with this notion. Perhaps not all members of this panel.

But it is not just a worthy goal, but as Congressman Ehlers has pointed out, an imperative for our country. And as in just about everything else, Thomas Jefferson was right here, too.

Some people are attached for reasons of history, heritage or even perhaps romance, to the system, the American system of pounds and ounces. And in fact, there is something very personal about it. We each define ourselves that way.

I, Chris Cox, weigh 170 pounds. I'm five feet ten inches tall. I run one mile each day. It's very personal. It's part of the definition of me.

But romantic and personal attachments notwithstanding, the fact remains that, as the Chairwoman has pointed out, almost the entire world would not define me this way. Our world, not the United States, is measured in meters and grams, and it's a good thing because by any objective appraisal, the metric system is a vast improvement over our nearly unique American hodge-podge of measures that each has its own base.

The metric system uses base ten. It is revolutionary in its simplification of fractions. Decimal fractions are one of the great conveniences of the base ten metric system.

So, very wisely, in 1975, Congress set us on an irrevocable course to convert to the metric system. When it's complete, pounds and ounces and feet and inches will be no more.

This, of course, will take some time, but it will be a great achievement.

When the Moors in Spain first introduced Arabic numbers to Europe, there was great resistance. Roman numerals were in use everywhere. But you couldn't add them. They didn't line up properly in columns the way that Arabic numbers in base ten do.

But despite the great convenience of the new system of Arabic numerals, they were not only resisted, but viewed by European society with suspicion.

In fact, many thought them to be the work of the devil.

As a result, the shopkeepers and the traders, whose jobs were made so much easier by Arabic numerals, were often forced to use them in secret. And it took centuries before the more clumsy and awkward Roman numbers finally gave way to a superior system that is in use virtually everywhere today.

The lesson of history, though, is worth noting today. It was the merchants and the traders and the market system for whose convenience this system was put into place, that eventually caused it to occur fully.

The question before us is not today whether to convert to the metric system. That is something that Congress wisely has already decided and it is a goal that, whatever other members of Congress may think, I fully support.

The question is whether the government should mandate that commerce be conducted in round numbers. It's a very different question.

And it's ironic because one of the great achievements of the metric system was that it made decimal fractions so easy to use. That was true even before we had calculators.

My legislation will clarify the current law, which you can see before you on this poster. The current law says that we use the metric system, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms.

Now that exception is much broader than what we actually need.

The current law says you don't even need to use the metric system if it gets in the way. But I don't believe the question ought to be, at least as the construction industry is concerned about it just now, whether we use the metric system, but, rather, whether we use round numbers.

It's a very different question.

My legislation will enable federal construction projects to be completed more quickly and more efficiently. It will save the taxpayers of the United States hundreds of millions of dollars in unnecessary expenditures.

These unnecessary expenditures have nothing to do with whether we use the metric system or not. They often amount to a 15- to 20-percent increase in the cost of construction materials for federal building projects. The result from one particular requirement, which is becoming more and more common, a requirement that bidders for federal construction projects use exclusively round numbers and that they must not use fractions. They must not use even decimal fractions expressed in the metric system.

My bill has wide bipartisan support, as Congressman Calvert has pointed out, to Democrats and Republicans throughout the Congress, including 16 members of this Committee.

It has been recommended for the corrections day calendar by the Advisory Group on Corrections because the principles behind the Savings in Construction Act rely on common sense and are consistent with the recommendations of Vice President Gore's National Performance Review.

The difference between hard and soft metrics is not a semantic one. The difference, as I said, is a 15- to 20-percent increase in construction costs.

But it's also hundreds of thousands of jobs of American workers. A soft metric conversion system simply means that the project components and materials will be measured in metric units. A hard metric system says they'll be measured in metric units and every block, every board, every shingle, every tile, fixture and window must be remanufactured in round numbers.

Often, this means that companies which wish to bid on federal projects must retool their production facilities to produce a product identical in every way, including to the naked eye, except for a slight, often unobservable, change in dimension.

I'd like to give just two examples of what this means, both from the government standpoint and from the job standpoint, from the consumer standpoint.

In Wilmington, Massachusetts, a small company called Lightolier of Wilmington, has manufactured light fixtures for 70 years and they currently employ 200 workers.

The general manager of the plant told a local newspaper that their equipment can't produce "hard metric" without retooling their equipment.

So in order to do it, in order just to bid on the contracts under this rule, they'd have to spend about $4 or $5 million. They can't because they don't have the money. The only employ 200 people.

If somebody else does retool, they're, of course, at a competitive disadvantage because they can't even bid at all. As a result, during the last year, Lightolier's sales have fallen due to their inability to participate in federal projects and they've laid off 35 people.

No less significant than the destruction of small businesses like Lightolier is the cost to taxpayers. Let's look at this from the Federal Government's side and from the taxpayers' side.

There is a courthouse in Kansas City, Missouri, that was scheduled to be built with hard metric specifications. The estimate of the cost of the project came to $117 million.

Fortunately for the American taxpayer, the administrators dropped that requirement, and the change in cost to the taxpayers was a drop in $20 million in what had originally been estimated to be a $117 million project.

Madam Chairman, this extra cost in just one project is an example of the kinds of savings that we can realize through the passage of this simple bill.

I strongly urge my colleagues to consider the question of whether it is a worthwhile objective, not just to convert to the metric system, but to require the use of round numbers. The requirement doesn't exist to my knowledge in any other aspect of science or industry or commerce, and it is ultimately, in my view, a silly one, especially silly in light of the fact that one of the great advances

of the metric system over our system currently in place is the ease with which we can compute decimal fractions.

I yield the balance of my time.

[The prepared statement of Mr. Cox follows:]

MAY 16, 1996

COMMITTEE ON SCIENCE

SUBCOMMITTEE ON TECHNOLOGY

TESTIMONY OF CONGRESSMAN CHRISTOPHER COX IN SUPPORT OF H.R. 2779, THE SAVINGS IN CONSTRUCTION ACT

Thank you, Madam Chairman, for the opportunity to testify this morning about the 1975 Metric Act and my bill, H.R. 2779, the Savings in Construction Act. As Congress has not addressed the state of metrication in eight years, and since some tough but tractable problems in our metrication drive have recently become apparent, I feel it is particularly appropriate to be reviewing it now. So I commend you and the members of this committee for your foresight and diligence in ensuring that the Metric conversion process in the United States runs as smoothly and efficiently as possible.

My legislation will clarify the current law, enabling federal construction projects to be completed more quickly and efficiently, saving the taxpayers of the United States hundreds of millions of dollars in unnecessary expenditures. These expenditures, amounting to a 15-20% increase in the cost of construction materials for federal building projects, result from one particular requirement which is becoming more and more common—a "hard" metric standard.

My bill has wide, bi-partisan support, and has been co-sponsored by more than 70 of our colleagues, including 16 members of the Science Committee, among them Mr. Calvert and Ms. Seastrand of this Subcommittee, and Chairmen Rohrabacher, Schiff, and Sensenbrenner. H.R. 2779 has been recommended for the Correction's Day Calendar by the Speaker's Advisory Group on Corrections, as the principles behind the Savings in Construction Act are consistent with those expressed by the Republican Contract with America, and those of Vice-President Gore's National Performance Review.

As the members of this committee are aware, the 1975 Metric Act and its 1988 Amendments require that beginning in 1994, federal construction projects are to use the metric system "except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms." The intent of this Act is clear: the federal government is to begin a conversion process in its own practices wherever possible, provided that these changes are not disruptive to commerce. The 1975 Metric Act requires that federal construction projects use the metric system, but it does not state what method of metric conversion is to be used. Unfortunately, federal administrators are causing disruptions by insisting on a "hard" metric rather than a "soft" metric conversion.

The difference between these terms is more than semantic, the difference is a 15-20% increase in construction materials costs, and hundreds, perhaps thousands, of jobs to American workers. A "soft" metric conversion simply means that the project components and materials will be measured in metric units. A "hard" metric conversion means that *every block, every board, every shingle, tile, fixture, and window must be remanufactured in round metric units.* Often, this means that companies which wish to bid on federal projects must retool their production facilities to produce a product identical in every way except for a slight change in dimension. The result is that small firms who cannot afford to retool are no longer able to bid on federal projects, creating an oligopoly of larger manufacturers who pass the cost of their new equipment on to the taxpayers through higher prices for construction materials.

- A prime example of this growing problem can be found in Wilmington, Massachusetts. Lightolier of Wilmington, a manufacturer of light fixtures for 70 years which employs 200 workers, now has to produce "hard" metric light fixtures to compete for federal contracts. Mr. William Fabbri, the general manager of the plant, told a local newspaper that they can't produce "hard" metric without retooling their equipment, and that to do so would cost between $4 and $5 million, funds the company doesn't have. "We can't retool," he lamented, and "if somebody else does, we're at a disadvantage." During the past year, Lightolier's

sales have fallen due to their inability to participate in federal projects, forcing them to lay off 35 workers.

No less significant than the destruction of small businesses like Lightolier is the cost to taxpayers resulting from a "hard" metric requirement in construction.

- In Kansas City, Missouri, federal administrators required that the new federal courthouse be built to "hard" metric specifications. The best estimate of the cost of the project came to $117 million. Fortunately for the American taxpayer, the administrators were forced to drop their "hard" metric requirement and institute a "soft" metric standard instead. The revised cost of the project was only $97 million, a savings of nearly $20 million. Madam Chairman, this is the extra cost on just one project—as this "hard" metric requirement continues the cost could well run into the hundreds of millions of dollars.

H.R. 2779 has been carefully drafted to address only the very narrow and specific problems caused by this burdensome application of the Metric Act to federal construction projects. It does not seek to change the Metric Act in any other way, and it does not attempt to address the larger issues surrounding metric conversion. Regardless of one's personal view of metric conversion, this bill should adequately address current wasteful government spending and the deleterious effect current regulations have on small business.

Under my legislation, an agency may still mandate a "hard" metric conversion in cases where it is practical to do so. If the "hard" metric requirement is contested by bidders, a "soft" metric requirement may be instituted instead provided three conditions can be met: (1) "hard" metric product is not readily available, (2) it will be too costly for small manufacturers to convert to produce "hard" metric product, and (3) competition in the bidding process would be significantly reduced.

Madam Chairman, I believe that conversion to the metric system of measurement is the proper course for the United States. One need only look at the automobile industry to see the benefits conversion has provided. However, I believe that the free market provides the proper mechanism to push metric conversion, not a federal mandate. American automobile manufacturers began to produce metric cars not because the government required it, but because they had to do so to meet the demands of a global economy. Because current "hard" metric requirements run counter to market forces, their application in federal construction projects is creating the types of problems I have highlighted here.

I hope that the Subcommittee will act quickly to prevent further waste of tax dollars and further lost jobs due to impractical "hard" metrication requirements by marking up H.R. 2779.

I thank you, Madam Chairman, and the other members of this Subcommittee for your time this morning, and for this opportunity to shine the light of Congressional scrutiny on a policy that is obviously antithetical to the intent of Congress and the 1975 Metric Act.

Mrs. MORELLA. Thank you, Mr. Cox, for that excellent testimony about the benefits of your bill. And I certainly applaud your efforts.

I do want you to know, however, that the only correspondence, I think, that I have received about your bill has been in opposition to it, and we have shared it with your office.

It appears that the major concerns about the bill are that the legislation isn't needed, no cost savings would result—I know you've just given us a couple of examples of how you've seen cost savings, and that the industry has agreed to voluntary consensus standards organizations, such as the ASGM, to use metrics and not the English system as a standard for measurement.

And I just wondered what response you would have to those groups that have come out in opposition for those reasons and maybe others.

Mr. COX. Well, I listened carefully to the comments by my colleague from California, Mr. Brown. And I take it that the concerns are premised on the notion that we oughtn't, having had this argument many times before, to go down the road of not now, later, or let's not be quite as serious about converting to metric as we have, or let's talk about it some more.

And I agree with all of those concerns. I don't think we ought to do that, either.

This bill has been carefully drafted to address only the very narrow and specific problems caused by the unnecessarily burdensome application of existing law to federal construction projects, not to any other aspect of life.

It doesn't seek to change the Metric Act, in my view.

I believe the current language ought to be sufficient—in practice, it has proven not to be because of administrative interpretation. But this bill should adequately address what I view to be current wasteful government spending and the deleterious effect that current regulations have on small business.

Mrs. MORELLA. Let me ask you also before we—well, maybe we can even—I don't know if we can take care of asking you questions before we go to vote, but maybe we can try.

At any rate, the Administration has appeared to show an interest in doing something about the concern or the challenge that you have mentioned.

I wonder, could you support an administrative remedy which could be negotiated by industry and government? And could you see the possibility of that?

Mr. COX. Well, I certainly could in theory, although this legislation has been in place since 1988 and it's obviously proven ineffective. We wouldn't have the stories to tell that we have. We wouldn't have the nation-wide interest that we've got if it were the case that the existing legislation worked.

We have thus far trusted to administrative remedies and they have failed.

Mrs. MORELLA. Does the panel believe that we should adjourn to vote and then come back to question Mr. Cox, or shall we try to do that now?

Mr. BROWN. Madam Chairman, my preference would be to briefly question him, and then let him go.

Mrs. MORELLA. Okay, because we do have two more panels.

Mr. Brown, would you like to go first?

Mr. BROWN. Mr. Cox, I had roughly the same line of questioning that the Chair had. And I have spoken specifically on this subject to the acting and undersecretary of Commerce who is responsible for the administration of this. And I have received reasonable assurances that they were going to be as scrupulous as they could in helping to negotiate an adjustment that would assist the people that are the subject of this bill.

I don't know whether they will succeed, but I will do my best to put the fear of God into them to do that.

And if they can succeed in satisfying the beneficiaries of this legislation, I think I'd like to make that pointed question. If they can succeed, would that be adequate for your purposes?

Mr. COX. Well, I have difficulty understanding why, if we are capable mutually of expressing ourselves in writing, it would in any way hinder the goal that we're seeking to achieve that we enacted in the statute because we have already got a statute that, in my view, is too broad.

I don't think you need to abandon the metric system, which is what that exception allows for, to solve these kinds of problems. And yet, the law permits it.

My bill, on the other hand, would continue to permit hard metric conversion wherever it is practical to do so. So we would even have, in addition to a mandated metric system, a mandated use of round numbers, even under this law, as long as the conditions were met.

Mr. BROWN. Well, in talking to Mary Good, the Under Secretary, she told me that she was not informed that there was a problem of this sort with the industry until your bill was introduced. And she would really like a chance to resolve the problem. And I assure you, she is making this statement in good faith.

Regardless of your response, I think that's the proper way to immediately provide assistance.

I don't think this bill is going to provide assistance in the near-term. I'd like to see a solution in a near-term.

Incidentally, speaking of round numbers, as one who works on occasion with wood, I want to ask you if you've ever seen a 2 by 4 that actually measured 2 by 4?

[Laughter.]

Mr. COX. Well, if it were the case that fudging the numbers in that way were satisfactory for all of these construction contracts, I know that we would have no complaints from industry.

Mr. BROWN. Thank you for that response. And you can answer the two before questions later.

Thank you, Madam Chair.

Mrs. MORELLA. Thanks, Mr. Brown.

Mr. Calvert?

Mr. CALVERT. I just have a quick statement and question.

I agree with everyone that it would have been much easier if Thomas Jefferson was able to prevail many years ago.

Mr. COX. If you would yield, I think it would be better if Thomas Jefferson were president today.

[Laughter.]

Mr. CALVERT. I don't have any disagreement with that, either.

[Laughter.]

Nevertheless, he didn't. And the problem we have today, I think, more than anything else is that larger corporations are more easily—I don't know if it's easy—but are able to convert because they certainly have the capital to do that over a period of time.

And the hardest individuals to convert are the people that are from small businesses. I can't think of any industry out there that has more various types of products and diverse than the construction industry—thousands and thousands of manufacturers spread throughout the United States. And the cost of converting is significant to them, to the point where they would possibly be put out of business and that business would go elsewhere.

This is only—and I think that this is an excellent bill that Mr. Cox has because this gives them the ability to at least go to round numbers to keep, for instance, which was mentioned earlier, the masonry block industry—it's not inexpensive to change all of those molds. Or to, if you're in any other industry where you have tooling, with the lathing equipment and the rest.

It's extremely expensive.

And so, this gives the opportunity over a period of time for people to retool and simplify the law, and I think it's a good thing.

I congratulate you for putting this bill forward and look forward to supporting it. I think it will have a lot of support on the floor.

Mr. COX. But if I might just briefly respond.

I couldn't agree with you more that if we are concerned about global trade and if we're concerned about the United States exploiting all of its opportunities to enter into world markets, then, certainly, we ought to be concerned about the competitiveness of our own industries.

And yet, there is a sense sometimes that I infer that we believe that industry doesn't know how to compete, that the market is in fact the enemy.

American automobile manufacturers began to produce metric cars, not after we passed a federal law, but because they had to do so to meet the demands of a global economy.

And the truth is that the world market is a lot bigger than the American market. Just as the historical example of the conversion to Arabic numerals suggests, it will be in fact today's merchants, the merchants of the late 20th and early 21st century, that drive us and not the other way around to an American dispensation of the use at all of pounds and inches and so on.

Mrs. MORELLA. Mr. Ehlers?

Mr. EHLERS. Just quickly, Madam Chair, since we have to go to vote.

I've been involved in these discussions for many years. And what's always impressed me is that everyone has accurate figures of how much it's going to cost them to convert.

In my experience, very few individuals have calculated the cost of not converting in terms of sales lost, particularly in the international market, but also of neglecting the extra labor involved in using the English system of units, which is a problem in many different professions and companies.

It's very important if you're actually calculating costs, to do it honestly and accurately for both options. Look at the cost of converting, as well as the cost of not converting.

Our nation has lost literally hundreds of billions of dollars over the years because we didn't convert at the time of Thomas Jefferson. The longer we wait, the more money we lose.

I realize it costs money to convert. But at some point, we have to press that. And waiting until we're forced to do it by international trade is not necessarily the most economical decision.

I'm not saying this in direct opposition to the bill. I think the construction industry probably has special requirements that most industries don't have, and I'm keeping an open mind on that.

But I think it's very important for all of us to recognize that there are many costs for not converting as well as costs to converting.

Thank you.

Mrs. MORELLA. Thanks, Mr. Ehlers.

Thank you very much, Mr. Cox, for being here and presenting so well testimony on a bill that you worked hard on.

Thank you.

Mr. COX. I wish to congratulate you again for holding hearings on this subject to both specifically the bill and generally, the progress of metrication.

Mrs. MORELLA. Your statement is exceedingly informative and important. Thank you.

We are going to now leave in order to vote and we will be back in about ten minutes. Mr. Calvert is going to chair the meeting at that point for a short period.

[Recess.]

Mr. CALVERT. [presiding] I would like to welcome our second panel.

Mr. William Fabbri, vice president and general manager of Lightolier, Wilmington, Massachusetts;

Mr. Norbert Rappl, president of Comac Building Supply, Rochester, New York;

Mr. Rod Lee, senior vice president of marketing in Conyers, Georgia;

Mr. Randall Pence, director of governmental relations, National Concrete Masonry Association, Herndon, Virginia; and

Mr. Donald Emich, president of Binkley & Ober, Incorporated, East Petersburg, Pennsylvania.

Welcome. I understand that we're allowing two minutes per panelist for opening statement. Welcome, and first, Mr. William Fabbri.

STATEMENT OF WILLIAM FABBRI, VICE PRESIDENT AND GENERAL MANAGER, LIGHTOLIER, WILMINGTON, MASSACHUSETTS

Mr. FABBRI. Good morning. As you said, I'm William Fabbri, vice president and general manager of Lightolier in Wilmington, Massachusetts, the company that Congressman Cox happened to mention.

I've been in the lighting industry for 43 years. In that time, I've held just about every position, so I'm quite familiar with every aspect of the business.

When I started in the fluorescent business, there were over 2500 regional companies manufacturing fluorescent lighting fixtures. Today, there are six that manufacture more than 80 percent of the fixtures sold. This transition came about mostly due to the automation and capital investment required for it.

The capital investment was in both machinery and tooling.

The companies who could not make this investment left the mainstream part of our business because they could not compete, price-wise.

Because of our efficiencies, the cost of freight to ship a two-foot by four-foot or two-foot by two-foot, or even a one-foot by four-foot, because there are many different size lighting fixtures, from New York to Los Angeles, is actually more than the cost to produce it.

If you had a truckload of lighting fixtures, you found out you could only get about 600 two by fours on a trailer. And a trailer to California is about $3000. Very quickly, you can find out that's roughly somewhere around $5 a fixture.

Well, it costs far less to make a lighting fixture.

These sizes that I mentioned represent about 80 percent of the recessed fluorescent fixtures sold in office lighting. Because of the freight cost, there are no imports of these products from companies not in North America. There are none from any countries at all.

Conversely, the likelihood of us being able to export large amounts by going to hard metric—notice I say hard metric, not soft metric—is nil.

We have no problem in converting catalogues from inches to millimeters and even dimensions of our drawings. In fact, our newest catalogues and spec sheets already show both. We call this soft metric, as mentioned.

Our problem is going to hard metric. Our standard two foot by four foot recessed lighting fixture, if converted to soft metric, is 609 by 1219 millimeters.

The government's interpretation of the law, or probably GSA's, is that they require it be 600 by 1200 millimeters. Our products would have to be three-eighths of an inch narrower and three-quarters of an inch shorter on a two by four.

Since all of our recessed products are fabricated on progressive dies—that's automated tooling—it is not possible to vary the width or the length of a part in that lighting fixture. This would require a permanent change or new tooling.

We manufacture five different recessed product lines. Each is manufactured in three different sizes that I mentioned. The complete tooling for each size is approximately $1 million. In the article earlier mentioned, I said $4 million. I was not talking about all the product lines.

This would be $15 million just to retool that portion of the line, forgetting surface-mounted units.

We do not have this kind of money. If we did, it would not be possible to make a reasonable return on the investment because government jobs represent about ten percent of the market. And assuming there would be competition, we would not get the entire ten percent.

So based on the volume available to us, the selling prices, we would not be able to justify the investment.

In addition to tooling costs, we have approximately now $2 million in in-process and raw material inventory to support the lines that we have. The hard metric requirement would require doubling this inventory.

We could not afford this money, nor would we have a place to put that in inventory.

In the past, we have supplied many government jobs every year. But over the last couple of years, we have had to turn down opportunities to bid government jobs that were hard metric because we could not manufacture that.

I have seen statements that Lightolier has quoted jobs for hard metric. We have not.

We employ approximately 200 people in Wilmington, Massachusetts, and I'm here for their concern and my concern about this measure. In the past two months, we have had to lay off 35 people due to a downturn in business. If these jobs had been standard products that I talked about that we couldn't bid, maybe we wouldn't have had to lay off the 35 people.

Hard metric will not get as far in business. More likely, it will help put us out of business.

Thank you.

Mr. CALVERT. Thank you, Mr. Fabbri. I'd like to remind the other panelists that we're attempting to keep the testimony down to two minutes.

Thank you very much.

[The prepared statement of Mr. Fabbri follows:]

My name is William Fabbri. I am Vice President—General Manager of Lightolier Fluorescent, Wilmington, Massachusetts. I have been in the fluorescent lighting business for forty-three years; thirty of those years were in product design. When I started in the fluorescent business, there were more than 2,500 regional companies manufacturing fluorescent fixtures. Today, there are six companies that manufacture more than 80% of all the fluorescent fixtures sold. This transition came about mostly due to automation and the capital investment required for it. The capital investment was and is in both machinery and tooling. The companies who could not make this investnent left the mainstream part of the business because they could not compete price-wise. In fact, the fluorescent business is so competitive today that at best the most profitable companies make about 3% or 4% after taxes. Because of our efficiencies the cost of freight to ship a 2' X 4', 2' X 2' or 1' X 4' recessed lighting fixture from New York to Los Angeles is actually more than the labor to produce it. These sizes represent more than 80% of recessed fluorescent fixtures sold for office lighting. Because of the freight cost and our labor efficiencies, there are no imports of these products from countries that are not in North America; conversely, the likelihood of us being able to export large amounts by going to hard metric is nil.

We have no problem in converting our catalogs from inches to millimeters. In fact, our newest catalogs and spec sheets already show both (this is what we call soft metric). Our problem is going hard metric. Our standard 2' X 4' recessed fixture is 609.6 X 1219.2 millimeters. The government's interpretation of the law requires that it should be 600 X 1200 millimeters. Our products would have to be 9.5mm (3/8") narrower and 19.2mm (3/4") shorter.

Since all of our recessed products are fabricated with progressive dies, it is not possible to vary the length or width of a part. This would require a permanent change or new tooling. We manufacture five different recessed product lines. Each is manufactured in three different sizes previously mentioned. The complete tooling for each size is approximately one million dollars for a total of $15,000,00. This is what it would cost to tool for the new size requirements. We **do not have the money** to make that kind of investment. If we did, it would not be possible to make a reasonable return on the investment because government jobs represent less than 10% of the market, and assuming there would be competition, we would only get a portion of this 10%. So, based on the volume available to us and the selling price, we would not be able to justify the investment.

In addition to tooling costs we have approximately $2,000,000 of in-process and raw material inventory to support these lines. The hard metric requirement would require doubling this inventory. We could not afford this nor would we have a place to put it.

In the past, we have supplied many government jobs each year. But over the last couple of years, we have had to turn down opportunities to bid government jobs that were hard metric because we cannot manufacture these products. We employ approximately two hundred people in Wilmington, Massachusetts. In the last two months we have had to lay off thirty-five people due to a downturn in business. If these jobs had been standard products, maybe we might have got one and not had to lay off all thirty-five people.

Hard metric will not help us get more foreign business. More likely, it will help put us out of business!

William C. Fabbri,
Vice President—General Manager
Lightolier Fluorescent

Mr. CALVERT. Mr. Lee?

STATEMENT OF ROD LEE, SENIOR VICE PRESIDENT, MARKETING, LITHONIA LIGHTING, CONYERS, GEORGIA

Mr. LEE. Good morning. My name is Rod Lee and it is a pleasure again to have an opportunity to testify before this Committee on behalf of NEMA.

Our member manufacturers do today produce over 85 percent of the recessed fluorescent lighting fixtures that are sold in the United States.

Federal agencies such as the GSA are mandating that recessed lighting equipment be provided in modular metric increments, known as hard metric dimensions, in new federal construction projects.

The most common recessed lighting fixtures used today for both government and private-sector buildings are in 2-foot by 4-foot dimensions. While there are often a number of other fixture configurations on a project, the 2-foot by 4-foot is predominant.This fixture size is the industry standard. The 4-foot dimension is based on a 48-inch fluorescent lamp which is the world's standard.

The large mainline fixture manufacturers that are the principal suppliers of these standard-size fixtures have made major investments in tooling and automation to apply the economies of scale in reducing cost.

Federal projects which mandate lighting fixtures produced to hard metric dimensions account, as Bill said, for only about ten percent of the U.S. lighting fixture industry's shipments. Manufacturers cannot produce hard metric fixtures using current standardized tooling.

Therefore, additional tooling is required to produce this nonstandard product, whose only customer is the Federal Government. The investments required to retool for producing hard metric fixtures simply would not be justified on the basis of federal building construction alone, which results in higher unit costs for hard metric fixtures required under the federal guidelines.

We know that depending on the type of fixture required in a procurement bid, the additional cost will run from 12 to 20 percent.

These are additional costs without attendant benefits.

It has been argued that industry-wide adoption of hard metric standards will make the lighting fixture industry more competitive internationally. This premise is not true.

U.S. lighting fixture exports are practically nonexistent, due to the expensive transportation costs involved in shipping.

Accordingly, most lighting fixtures are produced near to the customer in markets around the world to reduce costs and to meet local requirements.

In summary, NEMA supports the use of the metric system of measurement. The lighting fixture industry is ready and able to provide plans, specifications, and other documentation in soft metric form for federal projects.

We do not, however, believe there is any value to the lighting fixture industry, to the construction industry, to the national economy, in abandoning conventional size and performance standards and requiring nonstandard equipment for federal buildings that are more costly.

Thank you for the opportunity to testify.

Mr. CALVERT. Thank you. We are joined by the Chairman of the Science Committee, who has, I believe, a welcome he would like to give.

Mr. WALKER. Well, thank you. I welcome the whole panel here today and am delighted to be with you. We hope that this is a bill that we can move along very rapidly.

I particularly want to welcome my friend and neighbor, Don Emich, to this panel. Don and I have known each other for a long time now and we're delighted to have him with us and appreciate all of you coming here to testify today.

Thank you, Mr. Chairman.

Mr. CALVERT. Thank you.

Mr. Rappl, may we have your testimony?

[The prepared statement of Mr. Lee follows:]

STATEMENT OF THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION

SUBMITTED BY ROD LEE, SENIOR VICE PRESIDENT, SALES AND MARKETING

LITHONIA LIGHTING, CONYERS, GEORGIA

TO THE SUBCOMMITTEE ON TECHNOLOGY

COMMITTEE ON SCIENCE

U.S. HOUSE OF REPRESENTATIVES

FOR THE MAY 16,1996 HEARING ON PROPOSED AMENDMENTS TO THE METRIC CONVERSION ACT

Madam Chairman, my name is Rod Lee, and I am the Senior Vice President of Sales and Marketing for Lithonia Lighting, headquartered in Conyers, Georgia. Lithonia Lighting is a lighting fixture manufacturer employing over 4,000 people in the U.S. and is member of the National Electrical Manufacturers Association (NEMA). NEMA represents over 550 U.S. electroindustry companies that manufacture products used in the generation, transmission, distribution, control, and end-use of electricity. NEMA member companies serve a domestic market of nearly $100 billion, export $18 billion, and employ 500,000 people.

In this statement, I will present the views of NEMA member companies in the lighting fixture industry. Our manufacturers produce over 85 percent of the recessed fluorescent lighting fixtures sold in the United States. We appreciate the opportunity to testify on the proposed amendments to the Metric Conversion Act and to review HR 2779, the Savings in Construction Act of 1995.

The Omnibus Trade and Competitiveness Act of 1988, Pub.L. No. 100-418 ("the Trade Act"), authorizes the government to foster voluntary conversion of U.S. industry to the metric system. To that end, federal agencies are to "use" the metric system for procurements insofar as it is economically feasible and does not harm U.S. industries competitive positions. The Trade Act expressly provides agencies great flexibility in how to use the metric system to meet a particular industry's needs.

Federal government agencies such as the General Services Administration (GSA) are mandating that ceiling systems and recessed lighting equipment be provided in modular metric increments, also known as "hard metric" dimensions, in new construction projects. Recessed lighting fixtures produced in hard metric dimensions are either 600 mm by 1200 mm or 600 mm x 600 mm.

The most common recessed lighting fixtures used today for both government and private sector buildings are 2-foot by 4-foot dimensions, which translate to "soft metric" dimensions of 610 mm by 1220 mm. While there are often a number of other fixture configurations on a project, the 2-foot by 4-foot is predominant. This fixture size is the de facto industry standard. The 4-foot dimension is based on a 48-inch fluorescent lamp which is sold throughout the world and is *considered the world standard.*

These recessed fixtures are a commodity item in the domestic construction market and are very competitively priced. The large main-line fixture manufacturers that are the principle suppliers of these standard size fixtures have made major investments in tooling and automation to apply the economies of scale in reducing cost.

The GSA projects which mandate light fixtures produced to hard metric dimensions account for approximately 10 percent of the U.S. lighting fixture industries shipments. Manufacturers cannot produce hard metric fixtures using current standardized tooling. Therefore, additional tooling is required to produce this non-standard product whose only customer is the federal government. The investments require to retool for producing hard metric fixtures simply would not be justified on the basis of federal building construction alone, resulting in higher unit of cost for fixtures required under the federal guidelines. We estimate that, depending on the type of fixture requested in a procurement bid, the additional cost per fixture will run from 12 to 20 percent.

GSA has argued that industry-wide adoption of a hard metric standard will make the lighting fixture industry more competitive internationally. However, in a National Institute of Buildings Sciences study on the lighting fixture industry, GSA states that there exist "no worldwide standard recessed lighting fixture size." They state further, "In North America, the predominant sizes are 2x2 ft and 2x4 feet. Even GSA's procurement guideline, the Metric Design Guide, is conflicting in requiring hard metric fixtures, but also stating that fixtures should always be of "standard commercial design." A harmonized standard dimension does not exist world-wide and it is not moving toward a 600x1200 mm configuration.

U.S. lighting fixtures exports are practically nonexistent due to the expensive transportation costs involved in shipping. Lighting fixtures are large and bulky, yet light, making transportation costs prohibitively high. Accordingly, most lighting fixtures are produced near to the customer in markets around the world to reduce cost and meet local requirements.

In summary, NEMA supports the use of the metric system of measurement. The lighting fixture industry is ready and able to provide plans, specifications, and other documentation in soft metric form (metric equivalents of standard sizes) for federal projects. We do not, however, believe there is any value to the lighting fixture industry, to the construction industry, to the national economy, in abandoning conventional size and performance standards and requiring non-standard equipment for federal buildings that are more costly.

Thank you for the opportunity to testify.

STATEMENT OF NORBERT J. RAPPL, PRESIDENT, COMAC BUILDING SUPPLY, ROCHESTER, NEW YORK

Mr. RAPPL. Good morning. Thank you for the opportunity to be here this morning.

My name is Norbert Rappl. I am the president of Comac Building Supply in Rochester, New York. I am also serving this year as chairman of the board of our industry trade association, the National Concrete Masonry Association.

Our company was started in 1924 by my father and his partner, both of whom emigrated from Germany shortly after World War I.

Today, we represent about 20 percent of the concrete block production in the Rochester area. We employ about 25 people. Our sales range from a little over $3 million to around $4 million, depending on the vagaries of the construction industry.

We have made a study of the cost of converting to hard metric. In our plant, which is a relatively small plant, we have one machine. Two-thirds of the companies in the country are one-machine plants.

We estimate that it would cost of $183,000 to retool our plant. That does not include the cost of the wear parts in that conversion, which we would have to wear out regardless of what size was made.

In addition to that cost, we would have the additional cost of double inventory because very few projects in the Rochester area would be metric. Probably less than five percent.

The double inventory would cause our people—and I think I have two or three very good jobmen—I'm convinced they would make errors in handling these products, which are so close in size.

There would be no hope of recovering this cost. Because of the size, the weight and the brittleness of the product, we are confined to a trading area of approximately a 50-mile radius. We have no hope of trade, even to Canada, which is 90 miles away from us.

We have a unique situation in Rochester in that there are four block plants in the immediate Rochester area. Three of those are family-owned and operated plants, such as mine. The fourth one is a Canadian-owned plant. This plant would obviously have a great competitive advantage in that it could bring molds down from a Canadian subsidiary and produce the block at its plant in Rochester.

I'm sure they would initially do this without a premium in order to gain a competitive advantage. I'm also convinced that long-term, they would adjust the cost of bringing those molds down to Rochester into the price of their product.

Because of this competitive situation, we would not bid on a federally-assisted project. We could not because we do not have the capital to lay out this money in order to produce a hard metric block.

The block we make right now are 194 by 194 by 397, compared to the round number, 190 by 190 by 390. It's a very small difference, but it means retooling, which we cannot afford, and would not because of the competitive nature we find ourselves in.

Thank you very much.

[The prepared statement and attachments of Mr. Rappl, Mr. Emich, and Mr. Pence follows:]

TESTIMONY OF

NOBERT J. RAPPL

DONALD EMICH

RANDALL G. PENCE, ESQ.

REPRESENTING

THE NATIONAL CONCRETE MASONRY ASSOCIATION

REGARDING

METRICATION, THE C M INDUSTRY AND HR2779

MAY 16, 1996

Madam Chairman, on behalf of NCMA and the concrete masonry (CM) producers of the United States, we would like to thank you for the opportunity to explain to the Subcommittee why a government-forced hard-metric conversion of our industry is bad procurement policy, poor trade policy, hurts American businesses, hurts the American taxpayers, runs counter to stated congressional intent regarding metrication and, in simple terms, doesn't make sense; that HR2779 should be passed into law as soon as possible to obviate these problems.

Let us dismiss one important misunderstanding immediately: this issue is *not* about whether America should convert to the metric system. NCMA recognizes and supports America's conversion to the metric system. The question is one of *how* we should convert. The question is whether our industry, or any industry for that matter, should be required to go through an extremely difficult, impractical and costly hard-metric conversion when a much simpler soft-metric conversion will work. The question is how much burden the taxpayers should bear in bringing about the conversion. The question is how much economic disruption, how much procurement policy distortion should be tolerated in order to meet a very restrictive definition of metrication.

In the 1988 Trade Bill, Congress included language calling for the United States to convert to the metric system. Congress clearly stated that the conversion should not be made at any cost or without regard for the possibility of especially negative impacts by including the protective caveat "except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms.... "

The reason we are here today is that federal contactingg agents are disregarding these considerations. Federal contracting agents are going beyond the intent of the nation's metrication law and requiring industries like the C M industry to completely change their production practices, in addition to converting to the metric system, in order to qualify for contracts on federally-assisted projects. Congress never contemplated nor intended the scope of economic disruption that the agencies are imposing on our industry.

We have been unable to discover any formalized program within the federal agencies to ensure that the "impractical-inefficiency-loss-of-markets" passage remains a key consideration in the government's metrication efforts. We have been unable to discover any formalized mechanism by which industries may raise concerns such as ours and trigger a coordinated review and redrafting of construction policy that could resolve such problems without resorting to legislative action.

We see that federal contracting agents are all too willing to pay extra taxpayer dollars; all too willing to downplay other procurement imperatives designed to attract bidders, increase competition and increase multiple sourcing; all too willing specify government-unique specialty products used nowhere in the private sector instead of standard, commercially available products—all for attaining a version of metrication unduly severe in its impact on the CM industry.

We believe very few of the architects of America's metrication strategy have appreciated that Congress included such caveats in the 1988 language. Unfortunately, a large number of federal agencies seem fully prepared to sacrifice industries and see whole groups of American companies effectively shut out of the bidding process for federally-assisted construction.

We hope that Members of Congress, some of whom here today drafted and helped pass the 1988 Trade Bill language, will join us in demanding that the federal agencies give life, meaning and enforceability to the protective language Congress passed in 1988.

We need a clarification of the metrication law that takes into account the economic realities of the construction industry, that recognizes that some industries cannot reasonably do all the government is requiring and need to be treated differently for valid industry-specific reasons, and reaffirms once and for all, in a legally enforceable manner, that American businesses should not be forced out of bidding on their own government's projects for the sake of a narrow view of metric conversion. Apparently the 1988 Trade Bill language isn't clear enough. HR2779 will remove any doubt.

SOFT-METRIC VS. HARDMETRIC:

THE CRUX OF THE ISSUE

A soft-metric conversion involves switching from English inch-pounds units of measurement to metric units—centimeters and kilograms.

A hard-metric conversion requires one additional but crucial step: physically changing the size of the product.

For many industries, changing the size of the product is easily achieved, perhaps by moving a saw or some other uncomplicated adjustment. For other industries, no size change is necessary because the soft-metric dimensions are close enough to the hard-metric requirements to be within allowable tolerances without physical changes.

But for the C M industry and some others, the hard conversion cannot be made easily, nor can the soft-metric product meet the tolerances for hard-metric. Concrete

block and all concrete masonry units—CMU—are molded products. A hard-metric concrete block is approximately one-eighth of an inch smaller than an industry-standard inch-pound block. This may seem a minuscule difference, but it is just enough that in order to convert to hard-metric, producers must retool by purchasing hard-metric molds.

Changing molds is a major issue in the C M industry; it is a laborious, capital intensive process. Molds cost between $10,000 and $30,000 per mold. It takes various shapes and sizes in order to meet the needs for a large project such as a complex federally-assisted building. In 1996, the costs to convert to hard-metric production could easily cost $300,000 per C M producer. NCMA estimates that it would cost between $250,000 and $500 million to convert the entire industry.

We believe this would make the one-eighth-of-an-inch difference the most expensive one-eighth of an inch in American history.

Yet, the term "hard-metrication", the justification for such a sea change in our industry, does not appear in the Trade Bill.

SHUTTING OUT SMALL, MEDIUM BUSINESSES

Hard-metric conversion would require a huge capital outlay for the C M industry in which the national average profit margin is only two cents per unit.

It would be hugely disruptive in an industry dominated by small and medium-sized producers. Sixty-two percent of NCMA's members have only one block machine. Small producers would have to double their molds inventory. In addition, small producers would have to shut down all English unit production in order to accommodate hard-metric production.

CMU molds are cumbersome and difficult to transport routinely. One mold can easily weigh in excess of 1,700 pounds. Also, because of weight and transportation considerations, CMU is usually used within 50 miles of the point of production. Therefore, a very large percentage of the production sites would need to purchase molds in order to come close to approximating the level of current nationwide production in English units. There are approximately 1,400 CMU production sites in America.

Once the molds are purchased, the problems with making hard-metric product have only begun. From the moment the first hard-metric block emerges, each manufacturer would be faced with a daunting double-inventory problem. A producer would likely need to double the yard space for storage of finished product, a costly venture assuming that sufficient space is available at all. The two inventories are incompatible and may not be commingled, yet they are virtually indistinguishable to the naked eye. The greatest care will be required at all times to avoid commingling or delivering the wrong product to government customers. It must be assumed that misdelivery mistakes, costly and difficult to undo, will occur despite best efforts to the contrary.

Small and medium-sized producers cannot reasonably expect to deal with these issues and make a profit, especially considering the extremely limited market for hard-metric C M products.

NO MARKET FOR HARD-METRIC CM

Can the C M industry profitably convert to hard-metric production? In a word, no, certainly not in 1996 and probably not for the next ten to fifteen years at the earliest, if then. The Canadian experience, discussed below, indicates it could take much longer.

It is important to understand that while federally-assisted construction is very important and CMU producers compete hard for the government market, it represents only five percent of the overall U.S. construction market. The vast majority of construction in America is private sector construction. Federally-assisted projects can be few and far between, so that any major commitment by small or medium-sized producers would present a substantial risk in terms of recouping costs in any reasonable time frame. Even larger producers would have to expect to carry dead inventory and production molds for an extended period before future government business might develop to help recoup initial outlays for molds.

We must keep in mind that more than one-half of all government construction every year is for refit and renovation of existing buildings rather than new construction, and the buildings being renovated all use English CMU. Therefore, the potential share of the American market available to help hard-metric converters recoup their mold costs drops to from 5% to 2.5%.

As for the private sector interest in converting and creating a profitable market, we do not know of even one significant private sector project in the entire United States economy that has been built in hard-metric. None of NCMA's membership

reports even one private sector request for hard-metric product. Nobody can predict if—or when—the private sector will generate any significant demand for hard-metric product. The projections of the pro-hard-metric contingent notwithstanding, we find it highly unlikely that 2.5% of the U.S. construction market is going to ignite the rest of the country to switch with any rapidity.

One fact is instantly clear: the policy requiring hard-metric CMU instantly renders virtually the entire production capacity of the U.S. concrete masonry industry ineligible and unusable for federal construction. At the same time, small and medium-sized producers would have every reason to resist any version of private-sector metrication, hard or soft.

HARD-METRIC THWARTS POLICIES FOR USING OFF-THE-SHELF, COMMERCIALLY AVAILABLE PRODUCTS

The most likely scenario is that some of the larger C M producers around the country would purchase hard-metric molds and attempt to create a niche market for themselves. Smaller and medium-sized producers would grudgingly opt out of competing in the federally-assisted market, just as they would with any unprofitable niche market. Of course, this means that the competition for government projects would drop dramatically and costs to the taxpayers would rise as they would whenever contracting agents specify nonstandard specialty products.

PAYING FOR A SPECIALTY, GOVERNMENT-UNIQUE PRODUCT: THE METRIC PREMIUM

For companies that would try to fill the hard-metric niche, the only means to recoup the new molds costs would be to pass them on to the consumer—the American taxpayers. The result is that, in the end, the taxpayers would have to pay a "metric premium" for the sake of requiring hard-metric CMU, a specialty product required almost solely by the federal government. We believe there is virtually no support among the American electorate to pay any additional moneys to obtain metrication of any kind.

Further, the policy would lock-in a dual system of measurement for the foreseeable future, a major English-based system in the private sector and a much smaller metric-based niche market in the federally-assisted market.

We have been unable to ascertain whether there is a government-wide guidance on how much of a metric premium agents would be willing to approve in order to obtain hard-metric construction materials, but we do know that sizable extra allowances for metrication do exist. We have heard pricing ranges of 1-5% are acceptable. We have heard that higher percentages have been necessary. At a Construction Metrication Council meeting last November, a knowledgeable GSA official reported that a GSA federal building project in Kansas City received bids for hard-metric CMU a full 20% higher than would have been required for soft-metric CMU. Ultimately the project managers switched to using soft-metric CMU.

He also reported that the local project managers said if they had to do the project again, they would opt out of specifying hard-metric CMU at all.

It is timely to interject at this point that one of the major benefits of the metric system is that it is supposed to be more elegant in its simplicity and efficiency. With metric premiums, dual systems of measurement, dual inventories and more, we can see very quickly that there will be nothing simple nor elegant in forcing a small sector of the construction market to convert to hard-metric while the rest of the market virtually ignores the move and remains English-based.

NEGATIVE IMPACT ON GOVERNMENT PROCUREMENT: COSTS, COMPETITION, MULTIPLE SOURCING

In the early 1990s GSA staff assembled a list of companies that purportedly could readily provide ample supplies of hard-metric CMU. Unfortunately, nearly every entry in the listing was incorrect; perhaps one or two companies in the listing had the capability to provide hard-metric CMU. The rest were included incorrectly because of a poor survey design. Yet, this survey was used as proof that hard-metric CMU was widely and readily available, which is clearly not the case. This unfortunate misstatement of fact found its way to many agencies. NCMA has spent considerable effort trying to set the record straight on the ability of American C M producers to provide hard-metric CMU.

In late 1995, NCMA surveyed 798 CMU producers in the United States. 49% responded, a huge response rate which indicates the extreme sensitivity of this issue. Of those responding, only 2 producers indicated that they currently can make hard-metric CMU, and more than 390 indicated they do not have hard-metric molds, i.e.

they do not have hard-metric capability. We believe there are a few more hard-metric-capable producers in the country, but it is very clear that the vast majority—conservatively, at least 95%—of domestic production sites cannot make what the federal government wants.

Conversely, English-based or soft-metric CMU is produced by every CMU producer in the country. It is so plentiful that CMU is essentially a commodity with a national average profit margin of two cents per unit.

When federal contracting agents specify and accept soft-metric CMU, they achieve robust competition for bids, low costs that result from vigorous competition, multiple rather than sole sourcing, and large supplies of off-the-shelf commercially available materials. It is the optimum circumstance for any contracting agent.

If, however, the decision is made to require hard-metric block, everything changes. Competition can drop by 90-95%. Multiple sourcing is nearly impossible. In most areas of the country it is impossible to obtain hard-metric block at any reasonable price. If any bidders can bid in hard-metric, it is certain that a significant metric premium will be built into the bid.

This scenario will be repeated time and time again throughout the country whenever hard-metric block is specified. Because the only way for producers to recoup their retooling costs is to pass them on to the customer—the taxpayers—producers will have to build in the costs of the molds into the contract price. Like it or not, good public policy or not, whether federal contracting agents want to admit it or not, the federal government is going to subsidize the C M industry's switch to hard-metric in the form of higher bids and metric premiums to cover the cost of new molds. The additional cost will buy the taxpayers absolutely nothing in terms of additional value or performance. It will simply buy a different size, and the metric premium will be the entirely foreseeable price one pays for a specialty product that is government-unique and which 97% of the American construction market does not use. Congress needs to be aware of this point. The American taxpayers need to be aware of it as well.

In many cases federal contracting agents will never have the luxury of debating the issue of a metric premium because they will run into the roadblock of no availability at any price.

In late 1995 a contracting agent with the Centers for Disease Control contacted NCMA for help on the metric question. He related his situation as follows: the agent had been told by his superiors that a new construction project he was overseeing would be built using hard-metric materials, including CMU. Having heard about the hard-metric C M controversies, he had contacted 32 block manufacturers in his marketing region. In response to his first question, "Can you supply CMU for this project?", all 32 producers responded affirmatively, and with enthusiasm. Next, he asked, "Can you supply hard-metric block?" Immediately, all but 6 producers dropped out, unable to provide hard-metric material. Of the remaining 6, 3 knew enough about the issue to respond that they could provide soft-metric block—the block they currently make expressed in metric dimensions. The final 3 producers answered that they could provide hard-metric but did so in such vague and uncertain terms that the agent was certain they did not have hard-metric molds and were simply trying to stay in contention for the contract. His robust bidding pool had dropped from 32 to perhaps 3 and probably zero simply by specifying hard-metric block. In this case the agent could not even get to the issue of price. What was happening? Why wasn't this working? What should he do?

NCMA's explanation to him was that hard-metric theory was running up against hard-metric reality, and that these problems would hound his efforts as long as hard-metric block was specified. Our advice was that he abandon the hard-metric requirement and use soft-metric block, that this action would return him to a pool of 32 bidders, would restore multiple sourcing, circumvent the delivery and production problems that hard-metric production would certainly create. And there would be no metric premium.

There are further problems relating to the efficiency of the design process for federal projects. As we debate HR2779 today, federal contracting agents in various offices around the country are developing standardized designs for future projects. By way of example, NCMA has been told by US Army Corps of Engineers staff that they are currently designing standardized barracks plans specifying hard-metric block for use in regions where, by their own honest admission, they have no idea of how or where they are going to obtain hard-metric product.

USACE acknowledges that there will be many cases where hard-metric CMU is simply not available or there will be no acceptable bids.

Scenario 1: if there are simply no CMU bidders in hard-metric, projects will be completed using soft-metric, which is what NCMA advocates.

Of course the standardized design will have to be changed. Rebidding may be required as well.

Scenario 2: if there are hard-metric bidders but the prices bid are too high for the Corps to accept, projects will be completed using soft-metric, which, again, is what NCMA advocates.

Of course the standardized design will have to be changed. Rebidding may be required as well.

Scenario 3: it is quite conceivable that companies that do not make hard-metric product and have no intention of making hard-metric product will nonetheless bid, and perhaps win contracts, in hard-metric. Under the Value Engineering mechanism, the winning bidder may then come to the Corps subsequent to winning the contract and offer to complete the work at a lower price-using soft-metric block USACE personnel have told NCMA that this approach, which results in the use of soft-metric block, is completely acceptable. NCMA believes this practice will quickly become well known as the quick-and-dirty means for winning contracts while obviating the hard-metric requirements; hence, it will be used widely and often (bear in mind, the competition pool will still be reduced by the nonparticipation of producers who will not bid in hard-metric because they lack hard-metric capability, notwithstanding the Value Engineering scenario). But once again, projects will be completed using soft-metric, which is what NCMA advocates.

Of course the standardized design will have to be changed.

It quickly becomes apparent that USACE and likely many other federal agencies will end up using soft-metric block under several scenarios and on many projects no matter what. The difference is that the current government approach of trying to force a hard-metric purchase and then switching to soft-metric guarantees that inefficient and costly extra steps, including the drawing and redrawing of plans, and perhaps bidding, will be required. Again we see that the convoluted process caused by the initial insistence on hard-metric product ultimately will gnaw away any benefits of the purported elegance, simplicity and efficiency of using the metric system.

In summary, government insistence on specifying hard-metric block will result in higher prices to the taxpayers, reduced competition for contracts, reduced multiple sourcing, supply problems, de facto retooling subsidies for our industry, more complicated and convoluted bidding procedures, additional bidding gamesmanship to position for Value Engineering product substitutions, and additional redesign and redrawing problems.

TRADE BENEFIT BECOMES TRADE BURDEN

The theory behind adding the metrication language to the 1988 Trade Bill was that most of America's trading partners use the metric system, and that converting to metric would enhance American exports to those nations. In theory, if federal government procurement leads the way toward metrication vie the federal procurement system, the rest of the economy would follow.

Whether this theory is valid in general is not the issue here. At this time if there is a significant groundswell of support for metrication outside of the government sector, its silence is deafening. What is at issue is whether the C M industry may expect any of the much hailed export benefits that might justify the huge burdens involved in converting to hard-metric.

The answer is no.

For economic and transportation reasons, the vast majority of CMU is used within 50 miles of the point of production. CIM materials are rarely goods in international trade, with nearly all trade occurring at or near the borders with Canada and Mexico. There is practically no trade benefit to be had by converting CMU to hard-metric.

NCMA's members near the border areas where international trade might be feasible are concerned that specifying hard-metric block would actually give a trade advantage to their competitors in Canada and possibly Mexico as well. Foreign-based companies that already have hard-metric molds would likely enjoy a competitive advantage over domestically-based companies that do not.

One NCMA member reported that at a recent pre-bid meeting the government contracting agent in attendance affirmed that the project would definitely proceed in hard-metric; he said that the agency in question was willing to go to foreign sources if necessary to obtain hard-metric block, and they were prepared to pay a metric premium as well.

Considering that such a result can come from a bill whose stated purpose was to enhance the trade position of American companies, the hard-metric interpretation of the 1988 Trade Bill serves as a monument to unintended consequences.

LIKELIHOOD OF SUCCESS:

THE CANADA AND MEXICO EXPERIENCE

Perhaps the best example of how hard-metrication for CM materials has worked on the North American continent is to look at the experience of Canada and Mexico. NCMA's access to such information is limited and primarily anecdotal. Hard-metric block is now made and used widely in Canada and Mexico. However, the mere fact that the product is made is not the issue. Success should be measured in terms of the ease and lack of economic disruption with which the transition was made, the speed of the transition, and the completeness of the conversion.

Madam Chairman, I am including letters from a producer and an association executive in Canada that describe the experiences and opinions of those who have experienced the hard-metric conversion. Their letters make it clear that the Canadian experience was hugely disruptive and costly. It generated the same problems that we warn will develop in the United States. Canada converted to the metric system in 1978—18 years ago. Today, in large regions of Canada, English-unit or soft-metric block remains widely in production and use. We are told that in some areas it remains the dominant form of block, and that some builders will not use hard-metric block under any circumstances. Issues such as cost and double inventories have prevented many producers from converting to hard-metric, but other issues such as personal preferences and the fact that soft-metric block works as well have prevented hard-metric block from replacing soft-metric block. It has been argued that American producers will flock to make hard-metric and builders will use only hard-metric once they see the advantages; the Canadian experience demonstrates that this hopeful projection is far overblown and out of touch with how the construction economy really works.

18 years after converting, with a smaller economy and a greater national commitment to metrication, Canada has done little more than institutionalize a dual system of measurement, with everyone in the construction industry forced to work in both systems and deal with double inventories. There is no end in sight to the duplicative situation in Canada. There remains a healthy soft-metric C M market in Canada.

NCMA has less information about the Mexican experience and the parallels to be drawn might be less useful due to wider differences in the economies in general and a significant disparity in the quality of C M products. We can say that some of NCMA's members currently export English block to Mexico, a hard-metric country. We have also heard anecdotally that there is wide use of soft-metric block throughout Mexico.

Of the several lessons we can take from the other North American countries, perhaps the most important is that a strict adherence to hard-metrication virtually assures resistance by many, for a myriad of reasons, that will limit the speed of conversion and prevent the ultimate acceptance of a single measurement system.

Put another way, the drawbacks and costs of hard-metric conversion make the drawbacks and costs of perpetuating a dual system of measurement much more acceptable. It is yet another unintended consequence of forcing a hard-metric conversion.

PUBLIC SUPPORT FOR HARD-METRICATION

To eloquently state the obvious, there is no public support for hard-metrication. The federal government's insistence on hard-metrication, given all the sensitive issues that are raised by the consequences of hard-metrication for some industries, poses the most serious threat to the nation's metrication efforts. The general public's antipathy toward the metric system is well known.

It is unclear whether the general public will become aware of the great costs and complications of hard-metrication. We believe citizens will react with anger if the details and consequences of hard-metrication becomes the focus of public attention, which could result from even one major news account and could happen any time.

We do not believe the public will tolerate any taxpayer funds being spent for a metric premium, especially at a time when budget disagreements and government shutdowns have citizens extra-sensitive to funding issues.

We do not believe the public will tolerate the use of military construction funds to pay metric premiums for new barracks at a time when there are massive layoffs associated with military base closings.

Metrication is controversial enough without the added, viscerally striking negatives associated with hard-metrication. The metric conversion effort will never be successful in the U.S. unless the American public buys into the switch, and that will be very difficult to bring about if hard-metrication helps crystallize terms like "met-

ric premium" and "dual inventory" in the American lexicon. We predict that the private sector, the ultimate arbiter of whether metrication in America will succeed, will never buy into the switch as long as metrication carries with it a perception of greater burdens than benefits. Setting up a natural antagonism, the dichotomy of hard versus soft-metric, is clearly counter-productive if the federal government hopes to alleviate the private sector's concerns about switching. We strongly recommend that the metric proponents in government adopt the strategy of doing all things possible to remove the cost, controversy and consternation from metric conversion. Only when the metric proponents have satisfactorily eliminated the costly and disruptive negatives of metrication will the private sector embrace the positives of switching for domestic markets. Assurances of soft-metric acceptance by the government would do a great deal to remove the potential sting of converting in the private sector.

TECHNICAL JOB-SITE/PRODUCTION CONSIDERATIONS

Either hard-metric or soft-metric block may be used to build a metric building. It is likely that using soft-metric CMU will often require more cutting and trimming to achieve a proper fit in a metric building. This can take time and some additional labor cost. However, job-site reality is that cutting, trimming, shaping and fitting are a fact of life on any project, and this will always be the case regardless of whether soft-metric or hard-metric product is used. However, hard-metric conversion will cause very substantial problems on a metric job-site as well. A critical consideration is that the two different types of block are incompatible and must not be commingled.

In discussing real world problems, we must address the inevitable problem of delivering the right block to the wrong project. The policy requiring hard-metric product dictates that a dual inventory of products will be produced, products which are so similar in size as to be indistinguishable by sight but which are not interchangeable. The possible slightly increased labor costs of using soft-metric CMU will be inconsequential compared to the terrible problems that will arise if the products are mistakenly mixed together, which will certainly happen. We know this happened in Canada according to contacts with Canadian CIM industry personnel, and that it was always a very costly but entirely predictable mistake.

Beyond these considerations, the entire domestic concrete masonry industry could not make the transition to hard-metric any time soon even if the profusion of problems involving the switch did not exist. With 800 companies and 1,400 plant sites, a Manhattan Project of sorts would be needed to bring the entire industry to hard-metric capability. NCMA estimates that it would take at least 3 years simply to manufacture all the molds necessary to convert the entire industry.

CODES AND STANDARDS

One of the defenses raised for requiring hard-metric concrete masonry is that an ASTM standard, ASTM E835, sets forth a CMU standard in hard-metric.

In the early 1990s, the National Institute of Standards and Technology (NIST) proposed merging two existing standards, ASTM E835 (English system) and ASTM E835M (metric system) into one standard. This was approved without resistance from the C M industry. Soft-metric data was not included because it was not an active issue at that time. Soft-metric was neither debated for inclusion nor rejected for inclusion.

The codes and engineering staff at NCMA report that ASTM E835 simply has not been an important issue until now, and that it has been an irrelevancy in American construction until recently when it began to become a justification for requiring hard-metric CMU. Because it has been irrelevant in construction practice in the United States, our industry made no serious attempt to modify it until two years ago, when NCMA applied to modify the standard. Now that E835 is being used as a standard legitimizing the requirements for hard-metric materials, NCMA is vigorously working for the level of review that a serious and important standard deserves. NCMA is seeking to modify E835 to incorporate a soft-metric approach. An NCMA proposal to include soft-metric values was submitted and approved for balloting in 1995. If federal contracting authorities wish to tie themselves to ASTM E835, they should be prepared to change their stance at the moment the standard is modified. For the record, the C M industry does not endorse the current metric provisions of ASTM E835.

WHY A LEGISLATIVE SOLUTION/LEGAL MANDAMUS IS NEEDED

NCMA became active in metrication policy when the efforts of the Construction Metrication Council (CMC) and the masonry details in the GSA *Metric Design Guide* became known to our industry.

In 1993, NCMA representatives briefed a meeting of the CMC on the problems that hard-metric conversion would present. We opened a dialogue with the GSA design office in Washington DC which ultimately resulted in GSA making substantial ameliorating changes to the C M passages in the *Design Guide.* We felt that we had great success in explaining the reasons why the government should not force a hard conversion on the industry and that the GSA policy change would essentially stop GSA contracting agents from requiring hard-metric CMU on GSA projects; other agencies would see the wisdom of the GSA approach and follow suit.

We are attaching sample correspondence sent by NCMA to various federal officials to notify them of the GSA changes.

Not only did other agencies utterly, openly and notoriously disregard the GSA change, GSA's own field staff, the personnel who set actually forth the specifications for individual projects, either fcllowed or ignored them at will.

We have learned several lessons from the experience. First, the GSA *Metric Design Guide* is being used in unique ways certain to confound anyone looking for certainty and predictability in federal procurement. It seems that if the *Guide* agrees with the particular viewpoint espoused by a contracting agent, the agent uses the document as a defense, even as a requirement, for his or her decision. If, however, the *Guide* adopts a viewpoint at odds with the agent's view, the agent dismisses the document on the basis that it is only a guide, it includes no mandatory restrictions.

Second, we have learned that every contracting agent has his or her own opinion regarding metrication, and those who support the concept of hard-metric CMU regardless of the consequences will specify hard-metric CMU at will if allowed the flexibility to do so.

Madam Chairman, the United States needs one metrication policy that will provide the certainty and predictability necessary to promote confidence in the metrication effort. Because of the variation among thousands of contracting agents as to their opinions on what constitutes metric CMU, the policy needs to prevent individual government personnel from acting by fiat, trying to create or enforce their own views which may run counter to the intent of Congress. The policy needs to be clear, consistent, legally enforceable, government-wide and in keeping with the protective language in the 1988 Trade Bill. HR2779 will meet all these requirements.

HR2779

HR2779 will give force, life and meaning to the 1988 Trade Bill language designed to limit the economic disruption associated with metric conversion. It will prevent agencies from requiring hard-metric products or giving preference in bidding on contracts to companies which produce hard-metric products if a soft-metric conversion is technologically feasible and if a representative of the relevantt industry objects and provides a certification as established below within 180 days. Without such objection, failing certification, or after 180 days from notification of certification process, the hard-metric product may be required.

The criteria for the certification is as follows:

1,2, and 3 must all be met to establish certification and prevent a hard-metric requirement.

1.) One of the following: hard-metric product is not produced by 50% or more domestic manufacturers or hard-metric product does not comprise 50% or more of the production of the product

2.) Hard-metric conversion would cost small businesses on average more than $25,000 per manufacturer to invest in new equipment to produce hard-metric product.

3.) One of the following: benefits to the industry of conversion to hard-metric production capability would be negligible or hard-metric conversion would substantially reduce competition for federal contracts and increase by 1% or more then per unit cost of that product, or create special hardship on small businesses by placing them at a competitive disadvantage with respect to foreign competitors.

The head of each agency of the federal government would establish a list of appropriate representatives of each industry that may make a certification as described above. This list would be updated annually. It would include appropriate professional or trade associations recognized as representing those industries.

When presenting a certification, the representative would also submit a list of domestic manufacturers that have the capability to manufacture that product that is the subject of the certification as a soft-metric product.

What this legislation really does is restore the balanced view and the measured, reasoned conversion to the metric system that Congress originally envisioned in the 1988 Trade Bill. We should be challenging each federal agency for its plans to make sure that impracticality/inefficiencies/loss of markets to U.S. firms are avoided.

Madam Chairman, we have exhausted our administrative remedies. The case for obviating a hard-metrication requirement for CMU is so compelling that if the protective caveat language in the 1988 Trade Bill does not apply in this case, it will never apply in any situation. We ask that you and all members of the Subcommittee affirm that the metrication policy of the United States is not to be implemented by committing economic self-flagellation. We urge that HR2779 be passed and sent on to the House floor as soon as possible—before the misguided allegiance to hard-metrication may cause any more damage.

ATTACHMENTS

Letter from Bruce Clark, President, CCI Industries of Canada
Letter from Mark Patamia, Executive Director, Caran Concrete Masonry Producers' Association
Schematic drawings, hard-metric vs. soft-metric block
Excerpt, GSA *Metric Design Guide* relating to masonry
NCMA June 20, 1994 sample letter to federal officials re: GSA action
Excerpt, *Congressional Record,* statements relating to S1386
Article, *Investor's Business Daily,* 1/4/9 6

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May 13, 1996

Mr. Randall G. Pence
Director of Government Relations
National Concrete Masonry Association
2302 Horse Pen Road
Herndon, VA
22071-3406

Dear Randall.

Re: Conversion to the metric system of measurement
Comments on the Canadian experience as a concrete masonry manufacturer

At your request, I am submitting my comments regarding the Canadian experience of metric conversion as it relates to the concrete masonry industry.

For your information, I have been directly involved in the concrete masonry industry for fifteen (15) years; first as a division manager for a large multi-national company and subsequently as one of the owners of CCI Industries Ltd., the largest producer of concrete masonry products in western Canada.

The construction industry in Canada 'went metric' on January 1, 1978, almost 20 years ago. Metric zealots indicated that the conversion process would be 'smooth'. In reality, the conversion has been difficult from a business point-of-view for the concrete masonry industry in Canada. I would not go so far as to say it has been a "disaster" but using the word "difficult" certainly is an understatement! The expectation established for concrete masonry producers was to convert to hard-metric because masonry is a modular system. This expectation in itself created a number of business-related problems.

Producers were forced to purchase new sets of metric molds in order to produce a complete line of metric related products This cost in 1996 dollars is in the order of $300,000.00 per manufacturing site. An expense of this magnitude is unachievable for a small to medium sized producer. The end result is that there are many such producers across the country who still produce imperial units. This in itself fosters the continued use of the English measurement system in building design. In order to compete, hard-metrication has forced larger producers, like ourselves, to produce both imperial and metric size units and deal with the never-ending problems of a double inventory.

Human nature has also shown its fortitude Understandably, "older" designers, along with 'older'

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developers have refused to convert to hard-metric standards. As a business person operating in tight market conditions, it is self-defeating to refuse to supply imperial sized units when requested (or ordered) to do so by a designer or building owner. (Projects are hard enough to come by in any case!) This is another reason making the imperial system of measurement self-perpetuating.

The Canadian decision was not well thought out prior to the decision to define metric block as hard-metric. For example, no consideration was given to the retrofit of and additions to buildings designed using the imperial system. These projects invariably continued to be designed in the imperial system. Designers and owners alike demand imperial-sized units. Courses need to be matched using imperial block.

The reality is that approximately 35% of my company's production remains in imperial sized units, 18 years after the official date of metric conversion! I have strictly avoided analyzing the financial cost of metric 'non-conversion' (I am trying to avoid a heart attack at the ripe old age of 46!) The cost factors are clear: more shapes and sizes of units to manufacture...more mold changes...less manufacturing productivity (in the order of 15%)...double inventories.. increased carrying costs (company-wide, we estimate a requirement of an additional $500,000 in inventory per year directly related to the metric/imperial issue) ..

I see no end in sight to the dual system of measurement issue.

Yard organization is a major practical concern that deserves more attention. More yard space is needed which is a hidden cost. Metric and imperial units are incompatible but easy to confuse, so they need to be stored in separate areas. Yes, imperial-sized units have been mistakenly shipped to metric projects and vice-versa. It is a real problem on job sites particularly if the wrong units are placed in the wall. It has happened, though not often, and it has cost us.

Yes, soft metric conversion does work. It may not be the solution that the construction industry is looking for in the United States, but in the short to medium term it makes sense for the concrete masonry industry. It will provide the stability and long lead-time that a fractionalized industry like ours needs in these difficult economic times

If you can avoid the organizational "nightmare" and "substantial" additional operating costs that Canadian manufacturers have had to endure, do so!

Best Regards

Bruce D. Clark, P.Eng.
President

CCMPA CANADIAN CONCRETE MASONRY PRODUCERS' ASSOCIATION
L'ASSOCIATION CANADIENNE DES PRODUCTEURS DE MAÇONNERIE EN BÉTON ACPMB

May 14, 1996

Mr. Randall G. Pence
Dir. of Government Relations
NCMA
2302 Horse Pen Road
Herndon, VA 22071-3406

Dear Mr. Pence

Re: Metrication in Canada

As the Executive Director of the Canadian Concrete Masonry Producers Association, I am happy to give you my impressions on the Canadian C/M industry's experience converting to hard-metric.

Background
M day was Jan. 1, 1978, ie. the start of Metrication in Canada, the culmination of some 2 years preparation. Our own Metric Commission, bureaucratically dominated and with selected industry representation, viewed the transition through rose coloured glasses.

The reasons advanced for metrication in Canada were similar to those expressed in the U.S. today:

1. Rationalisation of sizes - which should not have been applicable to C/M because the 75/8 x 155/8 was standard in the 70's (10 years earlier, Ontario boasted of 5 common sizes) throughout Canada and the U.S.
2. Increased export potential - which proved to be irrelevant in the C/M industry; trade in block is negligible except for very limited trans-border shipping with U.S.

Canadians suffered the foreseeable dual inventory problems which were very costly. Complete sets of new molds, not a wear replacement mode, were required. Increased storage area, increased overtime for filling production needs rapidly and increased inventory, created new managerial challenges.

Product confusion required special handling and administration to identify and segregate the dual inventories, made difficult by the fact that the differences are not immediately apparent given the small dimensional differences which can fall within permissible tolerances.

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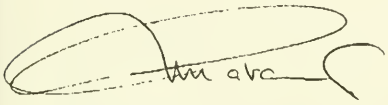
All technical literature required corrections and republication. The dimensional changes produce different properties eg. moment, section modulus, fire resistance etc. All this will need to be updated.

New Codes & Standards development costs may seem insignificant given the "volunteer" element, but when quantified and added together, the latter cost is substantial. Consider also designer/specifier costs in acquiring same.

Codes and Standards are a special consideration. Unless and until Standards and Codes are established to reflect metric data, the legal implications of supplying a non-referenced product can be a serious concern. Does the 530 Design Code allow equivalents?

My conclusion is that there were no advantages offsetting the major costs involved in converting to hard-metric.

Yours Truly

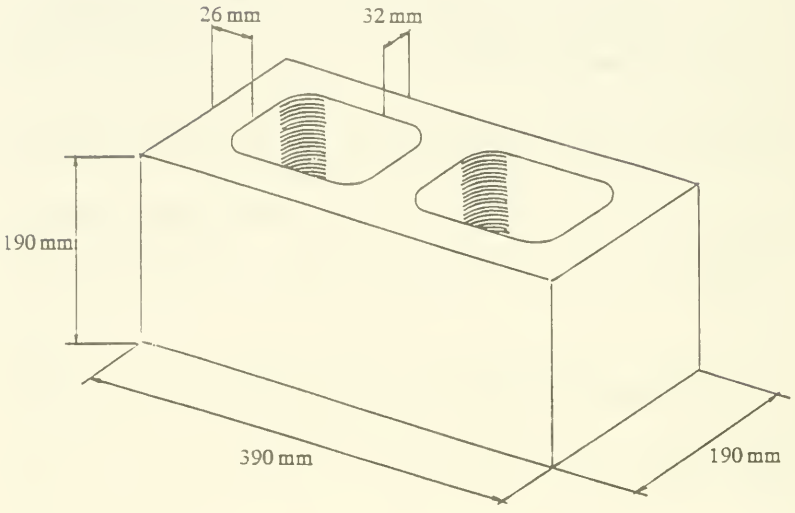


Mark Patamia
Executive Director

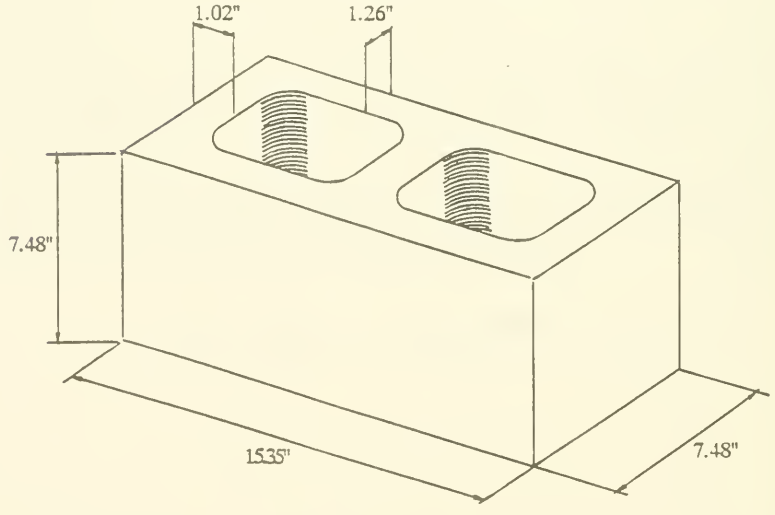
MP/jz

Hard Conversion (8" x 8" 16")
Standard Metric Size Block

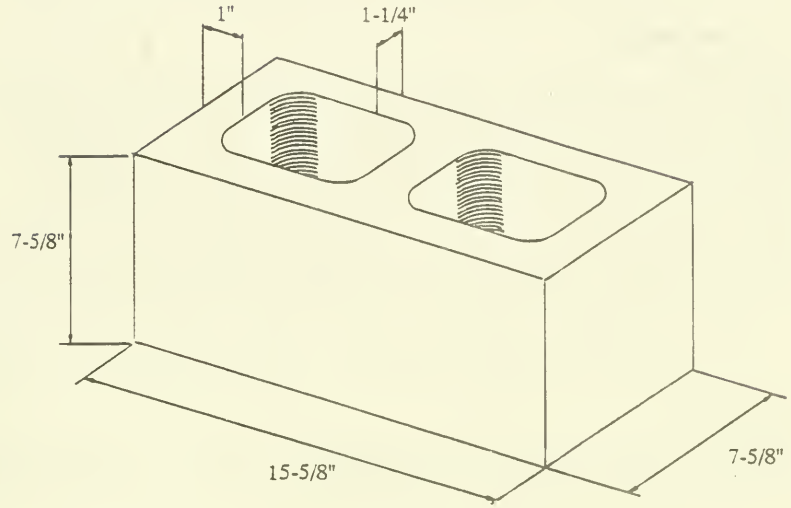
Actual Dimensions in mm

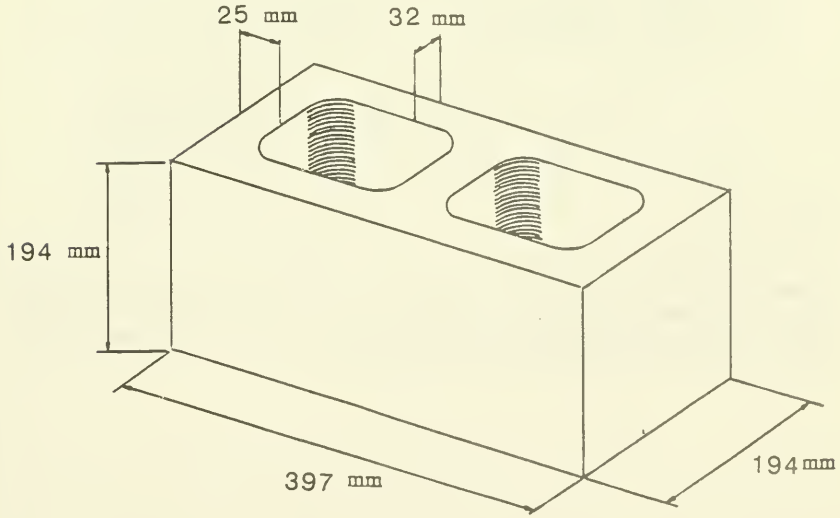


Actual Dimensions in inches



Soft Metric Conversion (8" x 8" x 16")
Standard U. S. Size Block





Architectural/Masonry

Masonry walls have a critical wall thickness for fire resistance and compressive strength. Beyond this, it is not important what dimension the height and width of a masonry unit is except for appearance, the ability to accommodate metric window and door openings, having even coursing ties, round dimensions between openings for ease of builder measurement and weight of the unit for lifting. Project requirements then should be limited to these factors with total competitive pricing determining the dimensioning. It should be noted that there are a number of proprietary, non-mortar joint, concrete block systems using English measurements, with builder labor advantages that also require a local manufacturer to have different molds for concrete masonry units, as do metric units.

Hard Metric ...

Examples of products that must be physically changed:

- Air diffusers and grilles (lay-in type only).
- Brick.
- **CMU (at option of contractor if opening locations are coordinated).**
- Drywall.
- Fluorescent lighting fixtures (lay-in type only).
- Raised access flooring.
- Suspended ceiling tiles and grids.

Block

A standard American "8-inch" block is 194 by 194 by 397mm for use with mortar joints. A non-mortar joint stacking block is usually 203 by 203 by 406mm. GSA has used 190 by 190 by 390mm metric blocks on some projects, which is the size that companies shown in Product Information responded to. The National Concrete Masonry Association may set a size standard for modular metric blocks in the future.

NATIONAL
CONCRETE MASONRY
ASSOCIATION

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June 20, 1994

Dear

On behalf of the National Concrete Masonry Association (NCMA), I am writing to call your attention to a significant change in federal metrication policy affecting concrete masonry materials (concrete block and brick) as set forth in the General Services Administration Metric Design Guide (henceforth, the GSA Guide), updated July 1993 and retained May 1994.

Earlier versions of the GSA Guide stated that concrete masonry materials such as concrete block would be placed on the list of items requiring hard conversion, without further qualification.

The current GSA metrication policy respecting concrete masonry is as follows:

> Masonry walls have a critical wall thickness for fire resistance and compressive strength. Beyond this, it is not important what dimension the height and width of a masonry unit is except for appearance, the ability to accommodate metric window and door openings, having even coursing ties, round dimensions between openings for ease of builder measurement and weight of the unit for lifting. Project requirements then should be limited to these factors with total competitive pricing determining the dimensioning. It should be noted that there are a number of proprietary, non-mortar joint, concrete block systems using English measurements, with builder labor advantages that also require a local manufacturer to have different molds for concrete masonry units, as do metric units. [underlining added]

The GSA change regarding metric block has also been endorsed by the federal Construction Metrication Council, as evidenced in its newsletter, Metric in Construction, September-October 1993 edition:

> The manufacturers of most [other listed] products can readily supply hard metric sizes, but the concrete masonry block industry has said it will have difficulty. This industry is composed primarily of small producers with a marketing radius of from 60 to 300 km. Hard metric conversion would require that they buy new mold boxes, which cost in the range of from $10,000 to $20,000 apiece--a large capital investment for small firms that have been hit by the economic downturn.
>
> In response to these problems, the General Services Administration (GSA) has modified its Metric Design Guide (July 1993) to permit the use of either conventional inch-pound block or metric block...
>
> [GSA language printed previously has been omitted]
>
> ...While the Construction Metrication Council advocates a timely and complete change to metric, its policy calls for each industry to convert to hard metric when it is economically feasible to do so. Because of the cost of hard conversion in the block industry, the Council endorses GSA's policy of permitting the use of either inch-pound or metric concrete masonry block, as project requirements dictate.

As the trade association representing the concrete masonry industry, NCMA tendered several compelling reasons why the policy toward C/M materials should be changed.

> 1) Regardless of anecdotal information to the contrary, very few C/M manufacturers currently make or have the molds to make hard metric product. In fact, at this writing, NCMA staff are personally aware of less than a handful of manufacturers in the U.S. currently equipped to engage in hard metric production.
>
> 2) Hard metric product may only be produced by purchasing entire new sets of metric molds, and at great cost; to incur such costs to service a relatively small portion of the overall construction market is economically infeasible.
>
> 3) A large portion of the producers of C/M materials in America are small, closely held businesses which could not afford to switch to hard metric production and would therefore be effectively precluded from bidding on federal projects. Switching to hard metric production is not an option for them.

4) Metric block and English block are nearly identical to the naked eye. Until this problem may be resolved, making two lines of indistinguishable but incompatible product would lead to double inventory problems and inevitable, costly misdelivery problems.

5) The original intent of the legislation calling for the conversion to metric usage in the federal government was to stimulate foreign sales of American goods by obliging American companies to produce metric goods which would be more readily marketable in metric-based nations. However, inasmuch as nearly all C/M materials are used within 50 miles of the point of production and are exported from the U.S. only rarely, hard metrication would work a substantial hardship on the C/M industry without any reasonable hope for recovering its losses with increased trade opportunities -- precisely the kind of industry situation described in the authorizing legislation that calls for an exception to the policy.

The new GSA policy recognizes that the key result is to achieve metric walls and wall systems, and the dimensions of the masonry product used to achieve a metric wall is unimportant. In nearly all cases, federal contracting officials will find that specifying concrete masonry in English dimensions will result in more competitive bids, greater availability of quality product, and ultimately, lower costs for completed projects.

I am attaching a copy of Page 14 of the GSA Guide, as well other correspondence regarding the metrication exception for concrete masonry.

I hope you will find this information useful. Please do not hesitate to contact me if you have any further questions.

With best wishes,

Randall Pence

Randall G. Pence
Director of Government Relations

Vol. 141 WASHINGTON, WEDNESDAY, NOVEMBER 1, 1995 No. 171

Congressional Record

United States
of America

PROCEEDINGS AND DEBATES OF THE 104th CONGRESS, FIRST SESSION

Mr. BURNS addressed the Chair.

The PRESIDING OFFICER. The Senator from Montana.

Mr. BURNS. Mr. President, I ask unanimous consent to proceed as in morning business for 15 minutes.

The PRESIDING OFFICER. Without objection, it is so ordered.

The Senator from Montana is recognized.

Mr. BURNS. I thank the Chair.

Mr. BURNS. Mr. President, I would like to talk about yet another example of Federal bureaucratic actions made without regard for the will of the people, the will of the Congress, the good of the country and basic common sense. We need to restore a degree of sensibility and sanity to the manner in which this country gradually converts to the metric system.

The 1988 trade bill contained language which established the metric system as the preferred system of measurement for the United States. Why was the language on the trade bill? The rationale was that it would improve the ability of American companies to export goods to metric-based countries if American firms could be moved to produce those goods in metric versions.

The principal tool for urging American companies to switch to the metric system has been to use government procurement policy. The trade bill included language "to require that each Federal agency, by a date certain and to the extent economically feasible by the end of the fiscal year 1992, use the metric system of measurement in its procurement, grants, and other business-related acdtivities * * *."

The problem I am addressing today arises from the unfortunate fact that the Federal agencies responsible for implementing the metric policy either forgot to read or are completely ignoring the remainder of the above sentence: "* * * except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to U.S. firms, such as when foreign competitors are producing competing products in nonmetric units;"

Congress never intended for the switch to metrication to be forced at any cost or without regard to its impact on people and industry. Issues such as impracticality and the loss of markets to U.S. firms were paramount in the minds of everyone aware of this language. Without these important considerations, the metric language would not have remained in the bill to become law.

Yet, we see today that Federal construction procurement policy for the various departments and agencies is completely ignoring this language and pushing ahead with metrication policies without any formalized plans for avoiding the pitfalls. In fact, they are going far beyond the level of metrication called for in the trade bills, and that is causing staggering problems for some industries. These problems are compounded by Federal procurement policies that hinder industry rather than promote trade.

Simply converting an industry to metric units of measurement is usually not a major problem. Converting the numbers from inches and pounds to millimeters and kilograms is a difference on paper which can be made by editing the marketing literature and computer design programs. The physical size of the product remains the same. This is known as a soft-metric conversion, and does little to interfere with efficient and well-established production practices or costs. The Government is allowing a soft conversion for most construction industries.

The problem is that some industries have been targeted to do more than use metric units of measurement; they are being required to change the size of their products as well. This is called a hard-metric conversion, and it can throw existing production practices into an uproar. At this point, industry is forced to change production practices. Even a minute change in size required by the Federal Government can force a business to completely retool and deal with all the problems with managing a second, hard-metric inventory of goods. This is Federal bureaucracy run amok.

And who picks up the tab for this intrusive Government policy? The taxpayer, that is who. Converting to hard-metric will add to the cost of Federal contracting jobs. And the industry will be forced to pass along the conversion costs to the Government and on down to the taxpayer. Under hard-metrication, the taxpayers are forced to pay a hefty "metric premium," whether they want to or not.

Mr. President, it is time to pass legislation that will take away the ability of the Government in Washington DC. to send whole established industries into a tailspin, to put small businesses out of the running for Federal contracts, and force the taxpayers to foot the bill for a warped view of metric purity.

There does not need to be a wholesale attack on the metric system. It is true that many industries can convert to the metric system with little or no trouble or expense, and that is fine. However, there are those cases where there are substantial, compelling industry-specific economic, trade or production factors that call for a soft-metric conversion. Industries that would bear unreasonable burdens in switching to hard-metric should instead be allowed to convert to soft-metric.

The Federal Government should refrain from developing or using designs, or requiring bids for hard-metric products when a soft-metric conversion is technologically feasible and certain other criteria relating to specific small business, trade and economic criteria are present:

The product is not available from at least 50 percent of the production sites, or hard-metric product does not constitute at least 50 percent of the total domestic production, and;

A hard-metric conversion would require small manufacturers of a product to spend more than $25,000 to purchase new equipment, and;

The economics and customs of the industry are such that any offsetting trade benefits would be negligible, or that hard-metric conversion would either substantially reduce competition for federally assisted contracts or would increase the per-unit cost to the taxpayers, or that hard-metric conversion would place small domestic producers at a competitive disadvantage to foreign competitors.

Mr. President, metrication may well have merit on paper and may have some positive impact on American business generally. But it is difficult to say how much, if any, impact it is having on business. Business is usually good at making decisions based on sound-business sense. Which is more than I can say for the Federal Government in this case.

We need to move legislation quickly, since I am aware that several Federal agencies are actively pursuing the development of hard-metric designs to be used on federally assisted construction. Federal agencies should strongly consider putting their design and bidding efforts on hold if they involve hard-metric product.

I ask unanimous consent to have a letter printed in the RECORD.

There being no objection, the material was ordered to be printed in the RECORD, as follows:

NATIONAL
CONCRETE MASONRY ASSOCIATION,
Herndon, VA, October 26, 1995.

Hon. CONRAD BURNS,
U.S. Senate,
Washington, DC.

DEAR SENATOR BURNS: I am very pleased to learn that you have taken note of the plight the concrete masonry (C/M) industry is facing with regard to the hard-metric conversion the federal government is forcing on our producers. I would like to take this opportunity to explain why hard-metric conversion is terrible public policy, why it is so bad for the C/M industry, for the federal procurement agents and for the taxpayers, and why a soft-metric alternative is absolutely imperative.

Concrete masonry is the industry term for concrete brick and block. It is a very common, basic building component and is essentially a commodity. It is made by pouring concrete into molds of various shapes and sizes, and then drying the product for the requisite amount of time. Over the course of decades, the industry has developed uniform shapes and sizes that are common throughout the construction industry. All C/M manufacturers have purchased and maintain complete sets of molds to make the product, and they maintain inventories of various shapes and sizes.

Virtually all the producers in the country make product based on the English foot-pounds system. That is because virtually the entire American market uses English-based block. The standard concrete block everyone knows is 8" x 8" x 16".

Even though the long history of the C/M industry is based on the English system, it would be fairly simple to convert to the metric system of measurement—if that were all that Federal procurement officers required. The C/M industry has made it very clear that it can convert to the metric system immediately if that will satisfy the government's

requirement for metrication. All our producers have to do is express the standard concrete block in metric dimensions. 194mm x 94mm x 397mm. That only requires a change in our sales materials and some basic changes in our computer design programs. Changing the unit of measurement without changing the physical size is referred to as a soft-metric conversion.

However, the C/M industry is being told by federal contracting agents that converting to metric is not enough, that they want the industry to actually change the size of its product to achieve metrication and round numbers. Changing the physical size of the product in addition to changing the unit of measurement is called a hard-metric conversion.

There is nothing whatsoever in any legislation requiring a hard-metric conversion of any product. The words do not appear in any bill or any statement of policy by Congress. There is no legislative history showing any desire by any elected official to force any industry to change the size of its products or to radically change their production practices. If anything, the legislative history of the 1988 Trade Bill and the metric language attached thereto clearly indicates that this kind of intrusion into industry activity was exactly what the Congress was trying to avoid.

According to publications issued by the Construction Metrication Council, a group of federal construction policy officials in various departments and agencies who are coordinating metrication in U.S. construction, some industries are being required to engage in hard-metric conversion even in cases where it will be extremely costly, inefficient, and impractical to do so. The large majority of products will be allowed to use a soft-metric conversion, which should be the policy for all products. But some unfortunate businesses like the C/M industry have been targeted for hard-metric conversion and are being thrown into turmoil as a result.

The hard-metric block that the Council has defined is 190mm x 190mm x 390mm. This is roughly one-eighth of an inch smaller than the soft-metric version that the industry could produce today at minimal or no additional cost. However, that one-eighth of an inch difference for hard-metric would require C/M manufacturers to purchase an entirely new set of hard-metric molds in order to produce hard-metric product.

Concrete block molds generally range in cost from $10,000 to $30,000 per mold, and it takes many types of shapes and sizes to complete a typical large, complex federal construction project. Individual C/M producers have told me it could cost between $250,000 and $300,000 per producer to buy a complete compliment of hard-metric molds. NCMA has estimated that if the entire domestic C/M industry shifted to hard-metric production, it would cost between $250 million and $500 million.

That makes the government's eighth of an inch for hard-metric the most expensive eighth of an inch in American history.

Let's keep in mind that a hard-metric block is not stronger, not safer, not more durable, not more resistant to fire nor more energy efficient nor more anything useful. Perhaps that is the reason why there is no demand whatsoever in the American private sector for hard-metric concrete block. Nobody wants it because there is no reason to want it. The only difference is that it is more expensive, hard to find and difficult to produce.

Requiring a business like the C/M industry to convert to hard-metric shows an amazing lack of knowledge about or concern for the industry itself. Let's keep in mind that the rationale behind the metric language in the Trade Bill was to promote the trade stance of American companies. It so turns out that concrete masonry is only rarely traded in international commerce and is nearly never transported overseas. In addition, this is an industry whose product is so much like a commodity that the average profit margin per unit is 2 cents. The economics of the industry are such that it isn't feasible to ship block to Europe or Japan or anywhere beyond the border regions of Canada and Mexico. Most block is used within 50 miles of the point of production. Any trade benefit that might offset initial costs for other industries is utterly negligible for the block industry.

But the consequences of this policy get even worse. The vast majority of C/M producers in America are small, often family-held businesses. In NCMA, 62 percent of all of our member companies have one block-making machine. These companies will immediately be pushed out of the market for federal government contracts, the first victims of an economically negligent metrication policy. There is no means by which many smaller businesses can hope to recoup the huge capital outlay required to start up an entirely new line of products merely to satisfy the hard-metric preferences of federal bureaucrats. There is virtually no private sector demand for hard-metric product, so any income to offset the capitalization cost would have to come from the occasional federally-assisted project. Federally-assisted construction is less than 5 percent of the entire domestic construction market. Such projects are vitally important to the bottom line of a successful bidder, but they are too infrequent in most cases to justify the investment and, indeed, the risk, of buying a new line of production molds and hoping enough business comes along to eventually recover the initial investment.

Is this how the 1988 Trade Bill was supposed to improve the ability of American firms to engage in foreign trade? Hard-metric conversion would work a trade burden on the domestic C/M industry, not a trade benefit. It would seem that this was exactly the unintended consequence that Congress sought to avoid in the 1988 Trade Bill.

Aside from the tremendous burdens it would place on the C/M industry, there would be increased construction costs to produce what amounts to a specialty product. I mentioned previously that there would be no way for a small block manufacturer to recoup its costs. Actually, there would be a way—by passing those additional costs on to the consumer, which in this case is the taxpayer. I understand that federal contracting agents are willing under the metrication policy to accept higher bids in order to obtain hard-metric product—a "metric premium" in the range of 1 to 5 percent. They have to because hard-metric product is often in very short supply or non-existent.

It gets worse. There are rumors that this metric premium may quietly but quickly get out of hand. During a June hearing before the House Science Subcommittee on Technology, chaired by the Honorable Connie Morella, Mrs. Morella told one of the witnesses that she had heard that a new advanced technology laboratory being constructed at NIST near Gaithersburg, Maryland is being built to hard metric specifications, and that GAO estimates the additional cost will be 20 or 25 percent. The witnesses did not deny that this was the case.

Just how serious is the issue of reduced competition for bids? NCMA recently sent a metrication questionnaire to the 798 C/M producers it knows to exist throughout the country. 398 responded, an astonishing response rate of 49 percent, which gives some idea of how important this issue is to the individual companies. Of those companies responding, I said it currently makes hard-metric block, 297 said they do not. Only two companies said they have hard-metric molds onsite to make the product. It is likely there are others who can make the product, but it is very clear that there is precious little availability of the product the government is asking for in the country today, and little capacity to make it.

Recently, I was contacted by a contracting agent for the Centers for Disease Control in Atlanta. He had a big hard-metrication problem of his own. It seems he had made calls to 32 block manufacturers to determine availability of concrete masonry. All 32 said they could provide all the block the CDC would need, and at competitive prices. But when the CDC agent asked whether the companies could supply hard-metric block, immediately all but 6 of the companies dropped out. Of the remaining six, 3 said they could provide soft-metric block. The last 3 companies indicated they might do whatever it takes to win the bid, but the agent believed that none of those companies presently have hard metric capability.

Clearly, the taxpayers will pay more per unit, enjoy less competition and have far fewer sources of product than can be had using a soft-metric conversion. Indeed, federal procurement policy staff have told me their design staff are currently designing projects in hard-metric block even though they have no idea where they will obtain the hard-metric material. It is entirely possible that there will be no responsive bidders in hard-metric, requiring the government to redraw plans and bid in soft-metric, all at increased costs to the taxpayers.

NCMA has gone to great lengths to persuade the federal contracting authorities on the basis of these considerations to relent on the hard-metric concrete block requirements.

We have thoroughly briefed the Construction Metrication Council on the problems we would face. We have provided position papers and fact sheets. We have met in small groups with the federal employees charged with developing agency procurement policy. We have invited CMC staff to speak directly with C/M producers. We have told federal construction representatives that there is only a relative handful of C/M producers in America that can produce hard-metric material. We have pleaded with CMC officials to reconsider the caveat language in the 1988 Trade Bill clearly showing that metrication is not meant to cause substantial inefficiencies and loss of markets to U.S. firms, but our entreaties have fallen upon deaf ears. The end result is that we have had cordial, business-like meetings but the drive for hard-metric concrete block continues unabated. The federal procurement policy officials keep telling block manufacturers to make hard-metric block or they won't be adequately responding to federal solicitations.

We have been told point-blank that if companies have to go by the wayside in order to convert to hard-metric, so be it, that is the price of progress.

It is clear to me that the only solution at this point is a legislative solution.

On behalf of united C/M producers throughout the country, I would urge that you and your colleagues pass legislation to restore the original intent of Congress and prevent the terrible, ironic consequences that the hard-metric conversion of concrete masonry would create.

With best wishes.

Sincerely,

RANDALL G. PENCE,
Director of Government Relations.

Mr. BURNS. Mr. President, I suggest the absence of a quorum.

The PRESIDING OFFICER. The clerk will call the roll.

The legislative clerk proceeded to call the roll.

Mr. MCCONNELL. I ask unanimous consent that the order for the quorum call be rescinded.

The PRESIDING OFFICER. Without objection, it is so ordered.

Investor's Business Daily

"The Newspaper For Important Decision Makers"

Thursday, January 4, 1996

Moving To Metric May Harm Construction Contractors

By Carl Horowitz
Investor's Business Daily

Conversion to the metric system may not fit the mold — literally. That could be costing contractors, and ultimately taxpayers, extra.

That's the view of Sens. Conrad Burns, R-Mont., and Richard Shelby, R-Ala., in the Senate, and Rep. Chris Cox, R-Calif., in the House.

The lawmakers have sponsored similar bills that would clarify the intent of the National Metric Conversion Act of 1975. That law, in part, requires bids on federal construction contracts to be in metric form.

The intent of the bills is to reduce the compliance burden on firms. Supporters say in the absence of such action, federal agencies will continue making the 1975 law into an unfunded mandate, despite lacking statutory authority. They add that these agencies are ignoring some basic economics of construction.

The issue comes down to definition.

Federal contractors until recently submitted bids by converting English-derived "inch-pound" measures into fractional metric equivalents. This process, known as "soft metric conversion," requires only minor design and marketing changes.

But agencies in the past couple of years have made contractors express metric figures as *whole* numbers. This is "hard metric conversion."

The Senate and House bills would ban federal procurement of hard-metric modular building materials, including flooring, ceilings and wallboard. As long as English-measure product is available, and as long as hard-metric use would cost more than $25,000, a firm could not be forced to use hard-metric standards.

In 1991 President Bush issued an executive order requiring federal agencies to develop goals and timetables to complete a conversion to the whole metric system.

Agencies agreed to begin instituting hard-metric measures by January 1994, and did so ahead of schedule.

The "soft vs. hard" distinction seems minor. For one thing, federal contracts make up only about 5% of U.S. building construction. For another, it appears to be just a question of plugging in numbers.

But appearances are misleading, says Randall Pence, director of government relations for the National Concrete Masonry Association, a Herndon, Va.-based trade group.

Pence argues full conversion would inflate bids and inventory costs, making concrete masonry producers less competitive. Putting metric figures in round numbers would require redesigning concrete masonry products from scratch.

"Using whole metric numbers would force us to make a standard 8" by 8" by 16" block an eighth of an inch smaller," he said.

That change would necessitate making new block molds at $10,000 to $30,000 per mold, hitting small firms the hardest.

"Producers tell me it would cost on average between $250,000 and $300,000 to buy a complete compliment of hard metric molds. If our entire industry had to shift to hard-metric conversion, it would cost $250 million to $500 million. And we'd get a product no more durable, fire-resistant or energy-efficient," remarked Pence.

He noted a few cases of how hard-metric use can inflate bids — or how soft-metric use can lower them.

■ At a House Science subcommittee hearing, Rep. Connie Morella, R-Md., revealed a General Accounting Office cost estimate of a new lab building for the National Institute of Standards and Technology. Hard-metric standards would add 20% to 25% to project costs, the GAO said.

■ A deletion of the hard-metric requirement lowered average bids on a courthouse project in Kansas City, Mo., by some $17 million, a more than 15% decrease.

Pence worries contractors might not find suppliers.

Among 32 potential suppliers for a Centers for Disease Control building, none made hard-metric block, he said. A recent NCMA member survey revealed only one respondent among nearly 400 made hard-metric block.

But the NCMA exaggerates, says architect Bill Brenner, executive director of the Construction Metrication Council.

"Only a handful of projects will ever have to use hard-metric measures. And the new bills before Congress, if anything, will raise contractor costs," he said.

Brenner added if the legislation became law, it would favor one industry type over others, block new technologies, and undermine America's position in a metric-oriented global economy.

Brenner admits hard-metric mandates might harm smaller firms. Thus, he urges federal agencies to continue their "go-slow" approach.

Pence says that the council's end goal is universal hard-metric use. A December draft report by the council lends support to his view.

"It is only a matter of time before the U.S. construction industry, which accounts for 6 million jobs and 8% of the gross national product, joins the nation's automobile, health care, and electronics industries (among others) in completely converting to the metric system," the report read.

H.R. 4848 by ROSTENKOWSKI (D-IL) --Omnibus Trade and Competitiveness Act of 1988

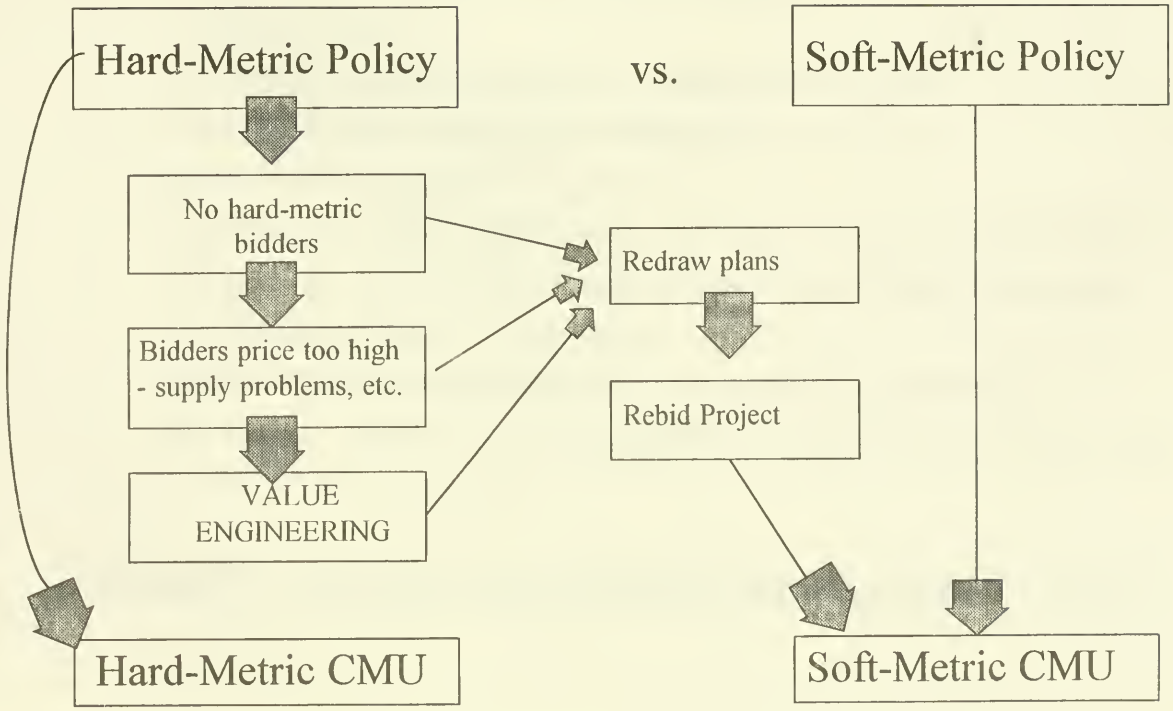
Sec. 5164. METRIC USAGE.

(b) Policy.--...the Metric Conversion Act ...is amended to read as follows:

"(1) to designate the metric system...as the preferred system of weights and measures for U.S. trade and commerce;

"(2)...**except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms**...

Soft-Metric Cannot be Avoided



Damage, Problems in Requiring Hard-Metric CMU...

...Instantly renders 98% of US production/inventory unusable
...Increases costs to taxpayers - METRIC PREMIUM
...Huge disruption to industry
...Effectively eliminates small and medium sized producers
...Forces a "niche" market for federally-assisted construction
...Competition drops by 90-95%
...Supply problems/single sourcing
...Forces government-unique specialty products
...Dual-inventory
...Trade disadvantage to domestic firms
...Controversial -- lightning rod for public disapproval

Why Congress Should Support Soft-Metric for CMU...

+ 10X to 15X more bidders
+ Lowest price to taxpayers - no metric premium
+ Maximum competition
+ Maximum multiple sourcing
+ 100% of America's inventory of C/M qualifies
+ Uses off-the-shelf, standard, commercially available product
+ Avoids trade difficulties
+ No negative impact on US companies
+ Avoids dual-inventory

= Good procurement practice, sound public policy

Mr. CALVERT. Thank you for your testimony.
Mr. Emich?

STATEMENT OF DONALD EMICH, PRESIDENT, BINKLEY & OBER, INC., EAST PETERSBURG, PENNSYLVANIA

Mr. EMICH. Yes. Good morning, Mr. Calvert. It's my pleasure to be here and testify before this Committee.

As Bob Walker said, I'm his neighbor. I live in Lancaster County and we operate in what is considered probably a medium-size concrete block company. We have three block machines in our business.

I guess I echo exactly what Norbert said. There is not much reality in that we will be exporting our product on the world-wide market. Basically, our product is delivered within 50 miles of our plant.

The cumbersome investment in capital mold parts to change to the metric system would almost be prohibitive for our company. I, too, estimate it would be at least $300,000 to retool.

But more importantly is the inventories that we would have to carry to meet most demands for metric and for English.

I think our neighbors to the north of us offer some powerful testimony. In our submittals are two letters, one from a block producer in Canada and one from the executive director of their association.

They converted to hard metric in their country in 1978, and in almost 20 years, they're still supplying both English and metric units, carrying double inventories and making investments in mold parts in both English and metric.

I think that this bill would offer us some relief and I wholeheartedly support it.

Thank you.

Mr. CALVERT. Thank you very much, Mr. Emich.

Mr. Pence?

STATEMENT OF RANDALL PENCE, DIRECTOR OF GOVERNMENT RELATIONS, NATIONAL CONCRETE MASONRY ASSOCIATION, HERNDON, VIRGINIA

Mr. PENCE. Thank you, Mr. Chairman, and good morning.

My name is Randall Pence. I'm the director of government relations for the National Concrete Masonry Association.

Ladies and gentlemen, this is the law of the land. It's been the law of the land since 1988, and I can tell you categorically today that many of the individuals responsible for enforcing that legislation in the Administration do not support it and are in many cases simply ignorant that the language even exists.

We think there's a great deal of wisdom in that language, but it is not being put in force and that is why we're here today.

NCMA is not new to this issue. We've been battling on hard metrication since 1992.

Today, we still have no resolution of the problem.

It was interesting to hear from Mr. Brown before he did leave to go vote. That is, it was his understanding that Undersecretary Mary Good just heard about this issue apparently fairly recently.

Mr. Chairman, that's a travesty. We've been dealing with this issue for three to four years now and it is just now getting up to

the level where people who apparently can make a decision to help us are just now hearing about it?

If there's any evidence that the system is broken, that surely has to be it.

We have talked to innumerable people trying to resolve this problem and yet, nothing has been done to enact this legislation to make sure it is correct.

Can we change the placard, please?

[Pause.]

Let me tell you that we understand that there is no system in place and we challenge the fact, any assertion that there is a system that is effective, absent passage of 2779.

As we speak, contracts are being let around the country. Designs for new buildings are being prepared around the country that incorporate hard metric block, a product which essentially does not exist in American production today.

We think that's wrong. Certainly if you're going to talk about the efficiencies and elegance of the metric system, very quickly you begin to see that the hard metric theory runs up against hard metric fact in the economy, and the results are not very good.

I'd like to point to the block that we have here today. This is what it's all about, Mr. Chairman.

We have two blocks. One is hard metric. One is soft metric. Now the differences from your vantage point are probably—you simply can't tell by the naked eye which one is which. I've had to ask my colleague, Don Emich, to tell me from time to time which one is which.

Apparently, we believe this one is the hard metric block [indicating].

The other difference besides the fact that we're very lucky today that we have a color difference between the two to distinguish them is that this block is made by 100 percent of the concrete masonry manufacturers around the country. It is essentially a commodity. It can be obtained anywhere, any place, for a very cheap.

This block, which is almost identical, but slightly different, approximately one-eighth of an inch shorter on its long dimension, will cost our industry up to $500 million. It is virtually unobtainable except through about four, five, six, a handful, literally, of producers in America today.

Now we don't see anything changing with that situation any time in the near future. It represents a huge and incredibly difficult venture into an entirely new product line that is currently only requested by the Federal Government, approximately 2- 1/2 percent of the entire American construction market.

We challenge the premise that 2-1/2 percent of any market is going to drive the other 97-1/2 percent any time in our foreseeable lifetimes.

We will also talk about the Canadian experience. We have some examples to look at on the North American continent in converting to hard metric block.

Mr. Chairman, the evidence we have from Canada, and I'll point to the letters that we have provided in our testimony, does not paint a very rosy picture about hard metric conversion.

Let me solve one issue right now and save all of us some time.

NCMA does not oppose the metric system. We support the metric system.

The simple issue boiled down to its most elemental concerns is this—how do we convert to the metric system? How do we ensure that we do not cause tremendous amounts of economic disruption and essentially take 95 percent or more of our production capacity in the U.S. and render it virtually unusable on hard metric projects bid around the country in the Federal Government?

So to conclude my statements at this point, Mr. Chairman, we have a lot more to talk about. I point to the placard that we put up to my left, to give you some idea of what is going to happen with the conversion to hard metric, and it is happening today.

As I said before, it renders virtually 98 percent of U.S. production in current inventory unusable or irresponsive to any bid according to hard metric block.

It increases the cost to the taxpayers. The phrase we've coined is the metric premium, and there will be a metric premium involved in getting a specialty product.

A huge disruption to industry. As I said, only a handful. And you can talk about a survey that we have done recently. Only a handful of industry producers currently in America even make the stuff or have the capability to make the stuff.

It effectively eliminates small- and medium-sized producers that simply cannot afford to go into this very minute and limited market with all the risks and costs that would be entailed.

It essentially forces a niche market for federally-assisted construction. We also show that a very few number of large manufacturers that can afford to carry a dead inventory for some time will be the ones who go into this market and the small- and medium-sized producers will effectively be shut out for economic reasons.

Competition, thus, will drop by 90 to 95 percent, running exactly counter to important initiatives in the procurement area in the Federal Government these days, trying to expand competition and multiply multiple-sourcing and avoid single-sourcing.

We're going to get a tremendous amount of single-sourcing if we go to hard metric block.

It forces government-specific, unique and specialty products, another initiative running exactly counter to what reinventing government initiatives is all about.

It forces a tremendous problem with double inventory. As we see here, two blocks. They are virtually indistinguishable, except for their color today. We can imagine all the problems that will inevitably come and have come up in Canada as a result of this delivery of product to the wrong job sites.

And I can assure you that although they look the same, the product are incompatible.

It will actually work—this trade bill language will actually work a trade disadvantage to domestic firms in certain areas around the borders of the country.

And last, but also very important, we have to consider, as we're trying to develop a groundswell of support for the metric system, we have to consider once again the controversial nature of this sort of proposal.

You, in fact, attach dollar costs and administrative problems to the metrication conversion. And this becomes clearly a lightning rod for public disapproval which will not help the metric system overall.

Mr. Chairman, thank you very much.

Mr. WALKER. Thank you very much. We appreciate the testimony of each of you on the panel.

Now we've learned a lot in recent years about the $500 toilet seat in Congress. Which one of those is the $500 million block?

Mr. PENCE. This one, sir [indicating].

Mr. WALKER. The one right in front of Don there is the $500 million building block, is that it?

Okay. When you say a metric premium, has anybody costed out what the metric premium to the government would end up being in terms of annual costs to the taxpayer?

Mr. PENCE. In terms of total annual cost, I don't know if we have—on a hard metric block, I'm not quite sure. It depends on how many—frankly, it depends on how many contracts would be successfully able to obtain hard metric block.

We think in most cases, hard metric will simply not be available.

But we have heard anecdotally, and it's very tough to pin this answer down, that the agencies are generally willing to accept a metric premium of one to five percent on various products.

Now, again, anecdotally, we have heard that there have been projects around the country where the premium has gone above that. But we're talking about large projects and a substantial figure can be dedicated to obtaining specialty products like hard metric block.

As far as production issues, perhaps Don and Norb could respond to that.

Mr. RAPPL. I would expect that, initially, on the first job, there might not be that great a premium to be paid because your large producer, in our case, a rather small producer, but one that has the capability of obtaining metric molds, would probably take a metric job in order to gain a competitive advantage and in order to block out other producers from starting to make the conversion and rolling up the cost of that into the sale price of the product.

Once he has established that niche, he can pretty much name his own price.

So the difference isn't—the question isn't what is the metric cost today, but what is the metric cost over the next five or ten years?

And I submit that that cost is indeterminable because of the market place. But it will increase as time goes on, rather than decrease.

In our case, if there were a federally-assisted project in the Rochester area, we would be blocked out from bidding it at a competitive price because of this one competitor we have. And so would our other two competitors.

He would then virtually have a lock on that production over an indeterminable amount of time.

Mr. WALKER. Mr. Tanner?

Mr. TANNER. Thank you, Mr. Chairman. I apologize for being late to the hearing and I appreciate the witnesses who are here on this important subject.

At this time, Mr. Chairman, I'd like—I have an opening statement that I'd like to ask unanimous consent that it be inserted into the record.

Mr. WALKER. Without objection.

Mr. TANNER. And I have some letters in regard to this subject matter that I'd also ask unanimous consent to insert into the record at this point.

Mr. WALKER. Without objection.

Mr. TANNER. Thank you, sir.

As I said, I am a little aware of this situation as it relates to primarily fluorescent lighting and concrete block or masonry products, as it relates to the conversion or the metric system. And I know that there is a problem in your industry.

I and some others have written to Dr. Mary Good to highlight just what Mr. Pence talked about in his presentation with respect to the provision that's already in law to allow for things that are overly burdensome or inefficient to be handled administratively.

I'm a little confused because we have some letters from some in your industry or in the construction industry that don't think that this House resolution, whatever the number is, 2779, is the right way to go.

For example, the ASTM—the American Society for Testing and Materials—has indicated that the market place is the driving force behind the conversion to metric, almost without respect to what the government may do.

A law that intercedes and bans what otherwise might be in the market place, where there is an exception in the law, is maybe not the right way to go.

The engineers have also indicated that they would rather not see a provision like this enacted into law.

Where is that letter? I want to ask for the one that you showed me—from the other guy.

[Pause.]

And I'd like to ask your comment on this because I know you all have a problem and we want to be helpful.

But one of the gentlemen who, for the first four years—this was in '88—one of the gentlemen who was with the Department of Commerce during the time period, '88 to 1993, has indicated—his name is Mr. Underwood, G.T. Underwood—and he wanted this letter of opposition entered into the record.

He goes on to say, for several years, he was head of the metric program at the Department of Commerce in the Reagan/Bush era. And therefore, obviously, I do not favor undue government intervention in the business strategies of U.S. private industry.

He says, and these are his words, it is disappointing, though not surprising, that a narrow subset of an industry places its own interest above those of their industrial family. Legislation such as the Cox bill is governmental intervention that contradicts the rationale of existing metrification law, law crafted very carefully to encourage a limited but helpful federal role.

I assume this man has some degree of credibility, although I don't know him, in terms of his service in the Department of Commerce, and he very strongly, and these are his words, not mine, objects to this.

Could I ask you to comment on this?

Mr. PENCE. Congressman, I would be glad to respond to that.

I was glad to hear that ASTM would be glad to have the concrete masonry industry fall on its sword for the sake of their version of metrication. I'm not quite sure why they are interceding at that sort of level.

Let me answer this.

If it were left to the market place, there would be no metrication movement. Currently, there is no private-sector—I mean zero—private-sector demand for hard metric concrete block.

Mr. TANNER. I'm not talking about concrete block here. I'm talking about metric conversion. It's happening in the automobile business faster than any government agency or this Congress can keep up with it. The market is doing that, not government.

Mr. PENCE. I agree. Congressman, in areas like General Motors, Ford, obviously, we have a dramatic trade benefit by going to the metric system.

It clearly makes economic sense for those industries to convert. They have converted. And I will put it to you that nothing in the 1988 Trade Bill affected that movement either way. Those companies knew there was a profit to be sought by going to hard metric and they did that. They didn't require any intervention by Congress to make that happen.

But the only anti-market place approach that I see is the requirement by Congress originally that there should be a metric conversion program. At least in the construction market now.

In the construction market, we don't believe there is any, in the private sector, there is any substantial or any measurable market out there or desire to go to the metric system.

Now we see that especially in terms of concrete block.

Mr. TANNER. Is it your position that the law, the '88 law that provides for an exception where it is burdensome or inefficient or doesn't make sense, is that not sufficient in your mind to take care of the problem that exists in the masonry industry?

Mr. PENCE. Congressman, if that language, if the spirit of that language were being enforced in a systematic way downtown and out in the field, I should add, for federal contracting agents, we wouldn't be here today because the system would be working.

The fact of the matter is the system is not working.

There have been cases where we have actually showed that language to chief and top federal contracting authorities in government. They weren't aware it existed, much less were they giving it any force and weight.

The marching orders we have seen downtown—and there are people of goodwill involved in this, but I think people are simply either confused or they feel their marching orders are to go metric at any cost.

Mr. TANNER. Let me ask you——

Mr. PENCE. Or almost any cost.

Mr. TANNER. Well, I don't know why after eight years they didn't know about it. But that's not unusual.

Mr. PENCE. We don't, either.

Mr. TANNER. I don't know if we pass this law, if eight years down the line, they'd know about that, either. But let me ask you this.

[Laughter.]

Mr. PENCE. We will help them.

Mr. TANNER. On March the 7th of this year, the President signed Public Law 104-113, which is the National Technology Transfer and Advancement Act of '95.

The Chairman and Mr. Brown and Mrs. Morella and myself were the prime sponsors of that. It included a standards conformity section that requires federal agencies to use technical standards that are developed or adopted by voluntary consensus, standards bodies.

The ASTM, which I quoted earlier, is a private, voluntary, consistent standards body with a standard for hard metric concrete masonry. These standards, as I understand it, are adopted by consensus process and so on.

Now, my only question is, we're kind of in a role-reversal here. Most of the time the Republicans argue that we don't need more laws, that we ought to let industry work out these problems. And the Democrats have the perception or reputation of saying, we want to pass a law to make everybody do whatever it is we think is good public policy.

I, in a hearing in this Subcommittee the other day, asked if there was a necessity for a law to bring to people's attention the cataclysmic circumstances that might occur if private industry doesn't do something about converting their computer programs to the year 2000.

That seems to me to be an area, and even then, some of them said they didn't think that they needed a law to do that. You're here asking for a law and it seems to me, and I want to be helpful, but it seems to me this flies absolutely right in the face of what we just did in the technology transfer law, trying to get government out of the business of making standards in private industry.

And this seems to me to be going counter to that.

Now I don't object if there's an overriding necessity to doing something like this. But there seems to be a great deal of confusion and even differences of opinion within the industry as a whole.

And so, do you think that, given the fact that some of these people are now aware of the '88 law, do you think that we ought to give that time to be looked at and see if they can come up with something that's rational and makes sense?

Mr. PENCE. Well, Congressman, if I may answer a number of questions here.

Mr. TANNER. And this bill, by the way, may be something to help that process.

Mr. PENCE. Even the introduction of the bill in hearings like this are helping to help us make our case.

In all fairness, I will say that we are dealing with top people and people of goodwill who are coming around to admitting to us that we have a very compelling issue to deal with here. And I think that's always the first step to some sort of resolution.

With regard to the voluntary standards process, clearly, NCMA participates in an active way in the voluntary standards process.

And as a matter of record, we support the development of ASTM and other standards we deal with.

I need to talk specifically about the ASTM 835 standard that you're talking about and give you some of the background that led into the way it exists today.

I've talked this over with our engineers at NCMA who deal with this issue on a daily basis. Apparently, in the early '90s, there was an ASTM 835 and 835-M. 835 used English measurements and 835-M used hard metric measurements.

At some point, there was a recommendation made to simply merge the two into one document for the sake of organization, if nothing else.

NCMA at that point went along with that move to merge the two.

At the time, the issue of soft metric was not an active issue. It was not a conscious issue for discussion. It was not debated. It was not turned down.

Now, in 1995 and 1996, we realize that there are elements of the government that are using ASTM 835, the merged version, that is devoid of soft metric data. They're using that as a defense for making hard metric requirements.

Now what we have done at NCMA, it is an active issue and ASTM 835 is being used in a meaningful way. It wasn't previously.

We have made application to the ASTM policy bodies to incorporate soft metric data into ASTM 835. They have accepted the recommendations and they have also accepted to have that recommendation balloted.

It is now an active and open issue.

Our message to the government entities that are depending upon ASTM 835 as a defense or a rationale for going to hard metric should be prepared also to accept the fact that that standard may be changed not too far in the future and may incorporate soft metric data as well.

Now with regard to unanimity within the industry, I can tell you, give you an example of what we did to assess how much interest there was in our industry as a whole in the hard metric issue.

Late last year, we located 800 total companies in America that comprise, we believe, all of the concrete masonry production in the U.S. We contacted all of them with a very simple survey, asking them, what was their hard metric capability?

To my surprise, having done some surveys in the past and being used to being very happy with four or five percent response rates, we had a 49 percent response rate.

Of the 398 responses we received, which comprises half of the domestic production, we received back, I believe, 396—the numbers are in my testimony. I may not have them exactly right. But 396 companies indicating that they have no hard metric capability, no hard metric molds. They simply cannot today produce a hard metric product. Period.

We had a response back from two companies that could.

Now even we believe there must be a few more companies than that in America that can produce a hard metric block. But we're really talking about a handful out of perhaps 800 companies, and upwards of 1400 facilities.

Now that begs another question. What do we do if we were, as an industry, to go to the hard metric system overnight?

First of all, our research indicates simply to make the hard metric molds, to refit the entire industry would take three years only to do that, simply to produce the molds.

Beyond that——

Mr. TANNER. I appreciate that. I don't think anyone is suggesting that.

I think what we are trying to do is work out a solution to your problem. You have a bill that you want to ban metric from being considered and that's a fairly, I would say, dramatic solution to the problem and one that, in theory, anyway, in terms of government and industry working together and being allies, not adversaries, ought to be looked at very carefully and if there's a way to do it administratively that's sensible and reasonable and makes sense, then I prefer to do it that way, rather than use force of law.

Most of the time, as I said, that would be what you would probably be hearing or think you would be hearing from the other side.

Mr. PENCE. If I may respond.

Mr. TANNER. Go ahead.

Mr. PENCE. I will say this. The bottom-line response that we would give is that we feel that we have exhausted our administrative remedies.

We are a long-standing participant in the Construction Metrication Council, which provides a very good forum and the top design people throughout government do appear and give updates on what is happening on metrication.

We have talked with Administration personnel. We have gone as far as trying to negotiate directly with GSA. That turned out to be ineffective, let's put it that way. We'll be kind. It was ineffective.

We feel, unless we have a legislative response that is mandatory nation-wide and enforceable, we will always endure this problem. And that is why we're back here today, using a legislative approach.

Mr. TANNER. Thank you very much.

Mrs. MORELLA. Thank you, Mr. Tanner. I'd like to also thank the Chairman of the Full Committee for presiding while I was gone.

Thank you, and so I recognize Chairman Walker.

Mr. WALKER. Thank you, Madam Chairman.

If I understand the way the law is written now, the only thing that's banned is the use of English under the law.

The law that we're talking about here would not ban the use of metric. It would still be permissible to use metric under the bill that we're considering here. But the way in which we have now designed the law, the reason why we need a correction is because, under the present system, it bans the use of English.

Is that not correct?

Mr. PENCE. I think that's very close to being correct, Congressman.

What happens is, first of all, the original legislation did not address the issue of hard metric versus soft metric, or the method of metrication.

We believe that that leaves open the authority to use soft metric, clearly, as a means.

Mr. WALKER. Okay. And the experience that you have had thus far and the reason why we need an act to correct it is because the

government got involved in it in the first place by mandating metric.

Mr. PENCE. Correct.

Mr. WALKER. And then we put a paragraph in which suggested that the administrators ought to be at least compliant toward solving these problems.

But what we have is now people who are enthusiastically moving toward metric, who, when you take them problems, are suggesting that you don't really have a problem.

Mr. PENCE. That is absolutely correct.

Mr. WALKER. And so, the fact is that the language in the present bill simply doesn't work because the people who are in charge of making it work don't pay any attention to it.

Mr. PENCE. That is correct.

Mr. WALKER. So the reason now why we have to have a bill to correct the law that we put in place in the first place is because we simply didn't do the job very well in the first place with regard to your industry. And while there may be very good reasons to voluntarily move into the metric system if you are involved in international trade of some kind and you are trying to make your products more acceptable in countries that are totally reliant on metric, in the case of your industry, that simply doesn't hold any water.

Mr. PENCE. That's correct. The original language had great wisdom to it, but it lacked specificity. It lacked enforceability. And that's what H.R. 2779 would bring into it again.

Mr. WALKER. And so all we are trying to do here narrowly is to give you the ability to use whatever metric numbers that the government thinks are necessary to keep its policy in line, but do so in a way that doesn't force you to retool an entire industry in order to meet a government mandate that makes no sense in your business.

Mr. PENCE. That's correct. And to help us avoid all the problems in supply.

Mr. WALKER. And nothing that we are doing here will back us away from the metrication process.

Is that right?

Mr. PENCE. We would use the metric system, metric system measurement, change all of our computer programs and marketing materials. We'd do it overnight using soft metric.

Mr. WALKER. So you would continue to manufacture block in the same way that you do now. You would express it in metric terms so that everybody understands what the metric conversion is. You would do all of that, but we simply wouldn't force you, in the name of some government regulation, to totally convert the industry.

Mr. PENCE. Yes, sir.

Mr. WALKER. And that's simply all this bill does. It doesn't get to any other policy issues.

Is that correct?

Mr. PENCE. That is correct. The bill has so many criteria involved in qualifying for this kind of treatment that it would be very narrowly constructed, very narrow in its impact on the industry.

Mr. WALKER. Do we have any idea of how broad this might be?

Mr. PENCE. We know, Mr. Chairman, we know of two industries and they are here today that would certainly avail themselves of this legislation.

We do not want to be part of legislation that opens it up broadly and opens the floodgates, so to speak. We think that is politically advantageous and completely unnecessary.

There are a few limited numbers of industries out there that are very vulnerable for all these reasons, many of these reasons, and for that reason, deserve the kind of special dispensation that H.R. 2779 would provide.

Mr. WALKER. But nothing in this bill is going to prevent General Motors or Ford or Chrysler or people who are participating in an international market place to go right ahead doing any metrication that they regard as necessary to compete in international trade.

Is that correct?

Mr. PENCE. Absolutely not. We would not support such a bill.

Mr. WALKER. Thank you, Madam Chairman.

Mrs. MORELLA. Thank you, Mr. Walker.

I'm very curious about a comment that you made before about working with the Administration.

Obviously, they seem to recognize and, of course, we'll hear from them in the next panel, more about that, recognize that there may be a need, particularly in your profession, in terms of you don't export beyond the 50-mile radius, et cetera, to make some changes.

And I think you said that you don't really feel that there is an ability to come to any agreement with industry and the Administration.

Can you clarify that a bit more? Have you had some meetings? What has been done?

Mr. PENCE. Madam Chairman, I feel we had an adequate opportunity to talk with key government personnel. We are very happy with the ability to take our case to forums like the CMC, the Construction Metrication Council.

I will mention that Bill Brenner and people associated with this movement have been very open to talk with us and come to meet with our people at various meetings, and so on and so forth.

So we've had an adequate hearing.

What is lacking here is concrete action as a result of that hearing. We hear fairly frequently that there is great sympathy for our case.

Mrs. MORELLA. No pun intended, of course.

Mr. PENCE. No pun intended.

[Laughter.]

It is not for lack of hearings. It's a lack of any action, and I would say a lack of a systematic way of approaching this.

A few years ago, we had the idea that if we went to GSA and could get the GSA to change its design guide that went out to all the GSA personnel around the country, to allow at least an even-handed determination between using hard metric block or a soft metric block, that that would give us substantial success.

Well, we did that. We had good discussions with GSA. They actually changed dramatically their design guide to more comport with our view of concrete block production.

We then found out, much to our surprise, and I think to everyone's surprise, apparently, the GSA field staff may at will take whatever position they wish to make in making their contract specifications.

As of today, GSA projects are still being let, or still being specified in hard metric block three years after those changes were made.

Apparently, GSA is not able to control its own field contracting staff. Well, if we can't handle that sort of issue, there's no process that is mandatory and enforceable within one agency, how can we possibly go out to all the other agencies and all their regional offices and all their contracting officers and try to convince them one by one of the merits of our concerns?

There seems to be a huge vacuum out there where I think a legislative response is very appropriate to help fix this problem because right now, there could be a lot of talking, but not that much concrete action.

Mrs. MORELLA. There could be an administrative remedy, though.

Mr. PENCE. Possibly, although I have wondered aloud with other people. If the Department of Commerce, for example, issued some sort of decree—thou shalt not use hard metric—I'm not quite sure how other government entities that feel a great amount of independence and a great amount of autonomy in creating their own specifications, how they would necessarily respond to that.

We understand there's a certain degree of competition between agencies on issues like this.

Mrs. MORELLA. I would like to give the panel, if they would like it, an opportunity to respond to anything that they know the next panel are going to comment on.

I always felt there was never the opportunity for someone who testifies early on to ever have an opportunity to respond. If any of you would like to, I welcome it.

And maybe, you want to start off with that, Mr. Fabbri?

Mr. FABBRI. Well, I don't really know what they're going to say, so I guess I can't comment on it.

Mrs. MORELLA. You haven't seen the testimony?

Mr. PENCE. Madam Chairwoman, if I could possibly answer one question in advance, I know it's going to come up, the issue of how difficult is it to use soft metric block in a hard metric building.

If I can get the soft metric versus hard metric placard up, that might help us in the discussion.

The fact of the matter is soft metric block will be used, of necessity, regardless of what we decide here today, on many hard metric projects. It will have to be because it will be the only block available.

Now there are a number of ways, even if we adopted a completely hard metric policy, here's what's going to happen, if I can point this out.

In hard metric, there will be some isolated cases where you can come directly down to getting hard metric CMU in an isolated way. It will be single-sourcing in most cases. You'll pay that metric premium from the taxpayers and so on and so forth, but there will be some cases where it does work.

However, there will be cases where the program or the plans are designed in hard metric, but there are no hard metric bidders. Well, the buildings will be built anyway. They will have to revert—I know the contracting agents will feel comfortable in converting to using soft metric block, which will be very plentiful and will work on the job.

That will necessitate in many cases redrawing of the plans, an extra step and, in some cases, perhaps rebidding the project.

So we'll wind up with soft metric, anyway, which is our position.

In other cases, bidders' prices may simply be too high. There's too much metric premium. There might be supply problems, so on and so forth, and that will necessitate a redrawing of the plans once again, perhaps rebidding of the project, and winding up with soft metric block, which is our viewpoint, anyway.

The last one is the one we've had the most difficulty trying to understand. But apparently, under the value-engineering concept, we can see a situation whereby a concrete masonry manufacturer that does not make hard metric block could very easily go out and win a bid by bidding in hard metric with no intention whatsoever of completing that job in hard metric.

Now that price will build into it a metric premium.

After winning the contract, the bidder would then go back to the government and under value-engineering, would then offer to do the project for less money using soft metric block that they make all the time, anyway.

If that is the case, it's considered a victory for value-engineering. But it's certainly not a victory for the metrication movement, if victory is obtaining hard metric.

You actually build in a strategy by which people would want to circumvent and would quickly begin to learn to circumvent hard metric by bidding it hard metric and later coming back and fulfilling the project in soft metric.

We think that is, at best, not an organized and reasonable way to have our procurement system work in the United States of America.

We solve that on the right side of the equation by simply setting forth a soft metric policy and putting up soft metric CMU.

And to conclude, if I can have the last placard up, please. By adopting this policy, you obviate the need for redrawing plans, which is not easily done, is expensive, and rebidding projects.

You wind up with ten to fifteen times more bidders, the lowest price to taxpayers. There will be no metric premium, maximum competition, maximum multiple sourcing, and 100 percent of America's current inventory of CMU would qualify for these bids, uses off-the-shelf, standard, commercially available product, avoids the trade difficulties that we're talking about, no negative impact on U.S. companies, and it avoids the dual-inventory problem.

That is what we're arguing for today.

Madam Chairman, thank you very much.

Mrs. MORELLA. Thank you. Did anyone else want to comment on what you think we're going to hear in the next panel? I'd assumed you'd seen the testimony and I guess you haven't had a chance to.

I'd also like to pose the kind of question that I posed to Congressman Cox. And that is, why is it that the letters that I have received have all been in opposition to this legislation?

Mr. Rappl?

Mr. RAPPL. Madam Chair, there have been some hard metric projects done in the country. I would suggest that while, on the surface, it would appear that those jobs have gone fairly smoothly, they did not go quite as smoothly as would be indicated.

We know of one project in which the block producer, substantial size block producer, did buy two metric molds in order to produce the most common block used on the job.

He did not, however, buy the large number of molds to make all the different shapes and fittings that had to go with those. In some cases, he rented those molds from a Canadian producer. In other cases, the block, the normal standard block that he delivered were cut and sized to shape on the job.

That doesn't show up any place, that additional cost. Blocks are cut and sized on the job, on every job. A substantial job is set up to shape and cut block.

If you have to take a large number of metric block and, for example, cut all the bond beam block out of regular block, there's a substantial cost to that. But it doesn't show up on the surface.

I think that kind of situation would happen in many jobs around the country.

A comment was made earlier that we could simply, as our molds wore out, we could just simply replace them with metric molds.

That doesn't work. We buy molds all the time. The molds that we buy have to produce a product that interacts with the other shapes and sizes we make. And unless all our molds wear out at the same time, it just doesn't work that easily.

Thank you.

Mrs. MORELLA. Mr. Fabbri, you wanted to comment.

Mr. FABBRI. Yes, Madam Chairman.

I guess my answer is the reason why you didn't get any letters is that I'm not familiar with the process. Otherwise, you would have been deluged with letters whose people's jobs are affected by this, as mentioned by Representative Cox.

Mr. PENCE. I have three answers to the question.

First of all, Ben Wu and I—Ben was good enough to meet with me with Shannon last year to talk about the issue. I think I discussed that point—does Mrs. Morella like to receive lots of letters on this sort of thing? Having been a former staffer on the Senate side, I'm sensitive to filling up people's in-boxes.

[Laughter.]

He indicated, no, we had adequately imparted the information about points. We tried to be kind in not generating a letter-writing campaign.

On a more serious note, let me say that I think there has been a concerted effort to defeat H.R. 2779 by characterizing the bill as somehow a wholesale attack on the metric system.

That could not be further from the case. I think people who make that sort of leap of logic are taking quite a chance there.

We have done all we can to make sure that we do support the metric system. It's a question of how we get there.

And the last answer, of course, the reason why you're not getting tons of industries writing you in favor of the bill is because there aren't that many industries that are required to go hard metric and have the kind of problems we face.

Also, we have purposefully tried to limit the scope of the legislation to make sure that it is not an attack on the metric system. We have tried to answer very specific problems in very specific ways, with criteria that are restrictive and mean quite a bit.

Mrs. MORELLA. I'm not suggesting that you motivate employees or others to inundate us with letters.

I think many of the letters, as you begin to look at them, point out that they also think that this might be the foot in the door, the precedent-setting exception and others may be looking for that, too.

At any rate, you've presented excellent testimony and responses, too, to the questions that were asked. And so, I thank you very much for being with us—Mr. Fabbri, Mr. Rappl, Mr. Lee, Mr. Pence, and Mr. Emich.

Thank you very much.

Mr. PENCE. Thank you.

Mrs. MORELLA. I'm going to ask the third panel to come to the table, please.

And I'm going to recognize them from right to left, my right. Per request of the panel, and we're willing to oblige, we'll start off with Mr. Marc Bohannon, who is the chief counsel for technology at the Department of Commerce right here. And then he will be followed by William Brenner, the director of the Construction Metrication Council in Washington. To be followed by Mr. Tom Cunningham, who is the senior project manager, R.M. Schoemaker Company, in West Conshohocken, Pennsylvania. Followed by Mr. David Wright, vice president of the United Masonry Incorporated of Virginia, from Alexandria. And then followed by Ms. Lorelle Young, who is the president of the U.S. Metric Association, Rancho Palos Verdes, California.

We're going to ask you if you'd be kind enough to confine your testimonies to two minutes, and then we'll have an opportunity to ask questions.

Thank you. Mr. Bohannon, good to see you again.

STATEMENT OF MARK BOHANNON, CHIEF COUNSEL FOR TECHNOLOGY, U.S. DEPARTMENT OF COMMERCE, WASHINGTON, DC

Mr. BOHANNON. Thank you, Madam Chairwoman.

I appreciate the Committee's flexibility in allowing me to testify on such short notice.

I am here representing the views of the Undersecretary of Commerce for Technology, Mary Lou Good, and would like to ask at this time that her full statement be submitted for the record.

Mrs. MORELLA. Without objection, so ordered.

Mr. BOHANNON. Her views also represent the views of the Administration on this issue and on this particular piece of legislation.

Let me leave you, Madam Chairwoman, and this Committee with two summary points from her testimony.

The first is that this Administration's policy is to support the procurement in all aspects of commercially available products as well as pursue a strong metric policy consistent with our new international global market place.

And for the most part, we have discovered that these policies are extremely consistent, as our country has made, and I believe, will continue to make, great strides towards using the metric system over the last decade and in the future.

Some notable examples we have already discussed here—the automobile industry, the tool industries. I would also say industries that are much less low-tech, like the lumber industry, also having adopted the metric system, to their success, which have aided not only their domestic competitiveness, but their international competitiveness as well.

And I would even urge to say that the construction industry, too, is largely metric, while there are some exceptions, as we heard in the previous panel, particularly those noted in the modular construction industry.

In response to the review of how the modular construction industry is pursuing and responding to a metric standard, to a metric system, and in response to a concern raised by the Ranking Member of this Committee, Mr. Brown, the Department of Commerce began to look at a uniform policy on treating the modular construction product industry consistent with the 1988 law that asked us to pursue a strong metric policy.

Those guidelines, which are the result of the Interagency Council on Metric Policy, I would like to ask to be introduced for the record at this point, along with the Under Secretary's letter back to the Ranking Member conferring those guidelines.

They are being published in the Federal Register this morning for public availability, but I do want to make it available to the Committee for its record.

Mrs. MORELLA. Without objection, so ordered.

[The following material was received for the record:]

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for Technology
Washington, D.C. 20230

MAY 15 1996

The Honorable George Brown
Ranking Member
Committee on Science
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Brown:

I wanted to follow up to my earlier letter to you, in which I assured you that the we would be taking a close look at a uniform federal policy relating to use of metric requirements for modular construction products.

The attached guidelines are the first step in the process in responding to your request. The guidelines are the product of the Interagency Council on Metric Policy, and are being disseminated to every department and agency. We are working closely with the Office of Management and Budget to assure that these guidelines are communicated effectively to the responsible procurement officials. They are also being produced in the Federal Register for the general public to have knowledge of the results of the interagency process.

The 1988 Metric Conversion Act seeks to ensure that our nation moves effectively toward the use of the metric system as a means of promoting our international competitiveness. Nothing in these guidelines changes that direction of policy as a priority. The 1988 Act envisioned, however, that there might be impracticalities or possible significant inefficiencies or loss of markets for U.S. firms as we move toward a broader use of metric measurements.

These guidelines reflect the administrative flexibility that the 1988 Act anticipated. In the case of modular construction products, the presumption has been shifted to meeting specific criteria before metric requirements can be used in construction product specifications.

I look forward to working with you and others in the Committee as we implement these guidelines.

Sincerely,

Mary L. Good

The Administrator of the Office of Federal Procurement Policy sent the following memorandum to federal procurement executives on May 15, 1996:

SUBJECT: NEW GUIDANCE FOR THE ACQUISITION OF MODULAR METRIC CONSTRUCTION PRODUCTS

I would like to call your attention to recently published guidance for the acquisition of modular metric construction products. The new guidance was recently published by Mary L. Good, Under Secretary for Technology, U.S. Department of Commerce, with the approval of the Interagency Council on Metric Policy.

Since the 1988 amendments to the 1975 Metric Conversion Act and Executive Order 12770, agencies involved in the construction of federal buildings and facilities have worked with the private sector to reach a consensus among the interested parties on the metrication process. While significant progress has been made in the metrication of federal construction projects, some metric-related concerns have surfaced regarding certain construction products. In addition, in enacting the Federal Acquisition Streamlining Act of 1994, Congress established a clear preference for the acquisition of commercial items by the Federal Government and prime contractors and subcontractors performing government contracts. The new guidelines make changes in the general policy on metrication of construction to address agencies' experience and recent statutory changes, and to promote uniformity in agencies' acquisition practices.

Dimensions of the vast majority of construction products need only be "soft-converted" for use in metric construction projects. A soft metric conversion means that the physical dimensions of the product are unchanged while the measurement units used to describe and specify the product are changed to metric units.

However, significant issues have been raised regarding the possible need for a small percentage of products to have their physical dimensions "hard-converted" to fit the product into the internationally recognized building module of 100 millimeters. Of the thousands of products used by the construction industry, only a handful -- mostly those that are modular in nature and must be dimensionally coordinated with other building components -- are directly affected. Modular construction products are brick, concrete block, suspended ceiling systems (including recessed lighting fixtures and diffusers), raised access flooring, wallboard, plywood, particle board, and rigid insulation. The metric-related issues that have surfaced all relate to these modular products.

The new guidelines provide for agencies to conduct market research to determine the commercial availability of modular metric construction products before developing new procurement specifications. Modular construction products in a hard metric size are only to be specified in federal construction projects when: (1) the product's application requires it to coordinate dimensionally into the 100 millimeter building module, (2) market research demonstrates the modular product's commercial availability, and (3) the product's total installed cost is reasonable. If these criteria are not met, the federal agency is to forego specifying the product in a hard metric size.

Please insure that the program officials in your agency responsible for construction programs are aware of this new policy guidance and take appropriate steps to implement the changes in policy. In summary, the intent of the law is to pursue metrication for increased cost-effectiveness and productivity in U.S. business and greater access to international markets while avoiding any undue burden on American firms.

DEPARTMENT OF COMMERCE

Technology Administration

[Docket No. 960508127-6127-01]

RIN 0693-XX18

Federal Agency Guidance for the Acquisition of Modular Metric Construction Products

AGENCY: Technology Administration, Department of Commerce
ACTION: Publication of Federal Agency Guidance

SUMMARY: These guidelines provide information and a policy statement for Federal agency implementation of metric-usage requirements in the acquisition of modular construction products. After a review process starting on April 12, 1996, the guidelines were approved by the Interagency Council on Metric Policy on May 3, 1996.

FOR FURTHER INFORMATION CONTACT: Mr. Ralph Richter, Metric Program, U.S. Department of Commerce, National Institute of Standards and Technology, Building 820, Room 306, Gaithersburg, MD 20899. Phone (301) 975-3690

SUPPLEMENTARY INFORMATION

Background

The Omnibus Trade and Competitiveness Act of 1988 (Public Law 100-418, section 5164) amended the Metric Conversion Act of 1975 to, among other things, require that each Federal agency use metric measurements to the maximum extent feasible in its procurements and business-related activities. To fully implement this legislation within the Federal agencies, Executive Order 12770, "Metric Usage in Federal Government Programs," was signed by President Bush in 1991. The Federal agencies are required to encourage and support an environment that facilitates the U.S. transition to the metric system of measurement.

Using the Executive Order and the 1988 amendments as guidance, the agencies involved in the construction of federal buildings and facilities have made substantial progress in the adoption of metric measurements. During this metrication process, the Government's construction agencies have worked closely with the private sector to reach a consensus among all of the interested parties: building material manufacturers, trade associations, design firms, and construction contractors.

Dimensions for the vast majority of construction products need only be "soft-converted" for use in metric construction projects. A soft metric conversion means that the physical dimensions of the product remain unchanged while the measurement units used to describe and specify the product are changed to metric units. To make metric construction succeed, however, a small percentage of products need their physical dimensions "hard-converted" to fit the product into the internationally recognized building module of 100 millimeters. These products are frequently referred to as modular products.

Just as it is logical and cost effective for inch-pound construction projects to use modular products that fit into the 4-inch module, it is logical and cost effective for metric construction projects to employ modular products that fit into the 100 mm module.

Modular construction products are brick, concrete block, suspended ceiling systems -- including recessed lighting fixtures and air diffusers, raised access flooring, wallboard, plywood, particle board, and rigid insulation.

Before a modular construction product in a hard metric size is specified in a federal construction project, the product's application must require it to fit together with other modular metric components, and the product must be found to be available at a reasonable cost.

The statutory language in the 1988 legislation provides the necessary flexibility for appropriate implementation of this policy on modular construction products -- the Federal agencies are required to forego metric conversion when it is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms. The intent of the law is to pursue metrication for increased cost-effectiveness and productivity in U.S. business and greater access to international markets while avoiding any undue burden on American firms.

General Policy

(a) As construction metrication efforts continue, the Government's construction agencies shall continue to work closely with all interested private sector parties building material manufacturers, trade associations, design firms, and construction contractors. Consensus, efficiency, and cost-effectiveness shall be the goal.

(b) The Federal agencies shall conduct market research to determine the availability of modular metric construction products before developing new procurement specifications. Procurement officials in each agency, to the maximum extent practicable, shall specify commercial items or nondevelopmental items other than commercial items to meet the needs of the agency.

(c) Throughout the acquisition process, the Federal agencies shall ensure that they give due consideration to the known effects of their actions on State and local governments and the private sector, paying particular attention to effects and possible cost burdens on small business.

(d) Modular construction products in a hard metric size shall only be specified in a federal construction project for situations in which the following criteria are met: (1) the product's application requires it to coordinate dimensionally into the 100 millimeter building module, (2) market research demonstrates the product's availability, sufficient to ensure competitive process, and (3) the product's total installed cost is reasonable.

Guidelines for Specific Modular Construction Products

A large portion of the language in this section is credited to the *Guide for Specifying Metric Modular Products*, a recently-developed draft document available from the Construction Metrication Council of the National Institute of Building Sciences. The Institute is a private, nonprofit organization created by Congress to serve as an authoritative source on issues of building science and technology.

Both the public and private sectors are working together to resolve building product metrication issues through the Construction Metrication Council. With broad support and participation of the private sector, the Council develops guidelines and recommends procedures to adopt the metric system of measurement as a means of increasing the international competitiveness, productivity, and quality of the U.S. construction industry. The Council works closely with the Interagency Council on Metric Policy to disseminate this information to the Federal agencies.

Steel Reinforcing Bar

Steel reinforcing bar is not considered to be a modular construction product because it is buried in concrete and is not required to coordinate dimensionally into the 100 mm building module.

Specifications for steel reinforcing bar are issued by the American Society for Testing and Materials (ASTM), a private sector standards-making organization. In 1979, ASTM first issued its International System of Units (SI) "hard metric" specification for steel reinforcing bar, ASTM A 615M. After receiving assurances from the steel industry that reinforcing bar conforming to ASTM A 615M would be supplied when it was specified and ordered, Federal agencies adopted this standard for their metric construction projects.

Starting in May 1995, the Concrete Reinforcing Steel Institute (CRSI) and the Steel Manufacturers Association (SMA) mounted a campaign to endorse, instead of ASTM A 615M, a soft metric conversion of the current inch-pound specification, ASTM A 615. Most steel companies

support the position that a soft metric conversion of ASTM A 615 should be adopted as the steel reinforcing bar standard for metric construction projects Since the summer of 1995, it has been recommended that the Federal agencies specify bar conforming to a soft metric conversion of ASTM A 615 for projects still in design and that they allow soft-converted substitutions for work ready to bid.

The American Society for Testing and Materials is in the process of revising its standard for steel reinforcing bar to reflect the steel industry's support for a soft metric conversion of this product. The industry has pledged to provide complete metric design information, data, and specifications to both public and commercial users of steel reinforcing bar that conforms to a soft metric conversion of ASTM A 615.

Brick

The American Society for Testing and Materials' *Standard Guide for Modular Coordination of Clay and Concrete Masonry Units*, ASTM E 835/E 835M, sets forth metric dimensions for brick based on a module of 100 mm Many common brick sizes are within a millimeter or two of metric modular sizes and nearly all can fit within the 100 mm module vertically by slightly varying mortar joint widths The Brick Institute of America supports metrication.

A table that can be used to specify common brick sizes in metric units is available from the Construction Metrication Council of the National Institute of Building Sciences.

Concrete Block

Concrete block is usually considered a modular product The Government's construction agencies, however, are aware of the costliness to the concrete masonry industry of buying the molds needed to produce concrete block in hard metric sizes and are attempting to minimize this expense Inch-pound (soft-converted) block substitutions are recommended in all cases in which concrete block is used as a backup or infill material and in which architectural considerations otherwise permit.

Concrete block in a hard metric size will only be specified in a federal construction project in cases in which the block will be located in an architecturally exposed area or will be required to fit together with other modular metric components. The concrete block must also be found to be available at a reasonable cost. The Corps of Engineers has stated that approximately 60 percent of the cost of a concrete block wall is labor, 25 percent is the concrete block, and 15 percent is for other materials such as mortar and reinforcement. In projects for which concrete block in a hard metric size is needed, allowing inch-pound (soft-converted) block may save on the cost of the block, but would substantially increase the amount of cutting and trimming and would unreasonably increase labor costs. Therefore, in certain circumstances, it is logical and cost effective for the Government to specify concrete block in a hard metric size.

Total installed cost should be the determining factor in the selection of concrete block. Most often, concrete block is used as a back-up or infill material, when this is the case, inch-pound block substitutions are recommended. Where concrete block in a hard metric size is considered for use as an architectural material or as a primary structural system, cost and availability should be determined in advance to judge the appropriateness of such use.

Suspended Ceiling Systems

Components for suspended ceiling systems are T-bars, hangers, ceiling tile, recessed lighting fixtures, and recessed air diffusers. All components are available in modular metric sizes from a variety of manufacturers. With the exception of recessed lighting fixtures, all components are priced competitively with their inch-pound counterparts. A few large lighting manufacturers with highly automated production processes oppose metrication, and the product may carry a slight cost premium. Even so, quality modular metric lighting fixtures continue to be procured without difficulty when specified in federal projects.

Cost and availability shall be determined when components for suspended ceiling systems are specified in modular metric sizes.

Raised Access Flooring

Raised access flooring is a specialty item used primarily in computer rooms and other areas where provision for under floor cabling is desirable. A number of manufacturers make raised access flooring to fit the 100 mm module, but there may be a cost premium for small orders and longer delivery times for all orders. The Federal agencies shall specify metric raised access flooring if costs are generally comparable to inch-pound access flooring and procurement lead times are acceptable

Wallboard

Wallboard is formed in continuous sheets of variable widths and cut to specified lengths. A variety of manufacturers make wallboard to fit the 100 mm module (1200 mm wide and 2400 and 3000 mm long), but there may be a cost premium for small orders and longer delivery times for all orders since metric wallboard is not yet a stock product While the use of metric wallboard is desirable in metric construction projects, its use is not mandatory on small projects if project length or cost will increase.

Where framing spacing is specified to fit modular metric construction, the Federal agencies shall specify wallboard sheet type and thickness without specifying length and width. The construction contractor shall make the decision whether metric wallboard sheets or trimmed inch-pound sheets offer the most efficient and cost-effective solution in each situation.

Plywood and Particleboard

Like wallboard, wood-based sheet products such as plywood, particleboard, and oriented-strand-board (OSB) can be produced in a 1200 mm width and 2400 and 3000 mm lengths. There may be a premium for small orders and longer delivery times for all orders since metric plywood, particleboard, and oriented-strand-board are not yet stock products. With the exception of military family housing, however, wood products are rarely used in Government facilities.

Where framing spacing is specified to fit modular metric construction, the Federal agencies shall specify sheet type and thickness without specifying length and width. The construction contractor shall make the decision whether metric sheets or trimmed inch-pound sheets offer the most efficient and cost-effective solution in each situation.

Rigid Insulation

Rigid insulation is used on exterior walls and as a roof underlayment Currently this material is available only in inch-pound sizes and must be cut to fit 400 or 600 mm framing spacing. On roofs, the product is usually laid over a rigid substrate that allows any sheet size to be used The Federal agencies shall specify sheet type and thickness without specifying length and width. Where the sheets are applied directly to 400 or 600 mm framing spacing, the width must be trimmed by the contractor

Further Guidance

Further guidance on the federal acquisition of modular metric construction products is available from the Construction Metrication Council of the National Institute of Building Sciences. Guidance is also available from the General Services Administration and its *Metric Design Guide*.

Dated: May 9, 1996

Mary L. Good

Under Secretary for Technology

[FR Doc. 96- 12180 Filed 5-15-96, 8 45 am]
BILLING CODE 3510-BP-M

Mr. BOHANNON. Among other provisions, these guidelines direct agencies to conduct market research to determine the availability of modular construction products before developing new product specifications.

The guidelines also state that modular construction projects should only be specified in a federal construction project for situations in which three criteria are met.

Number one, the product's application physically requires it to be sized as hard metric consistent with what are ongoing standards in the market place.

Number two, market research has shown that the product is commercially available, i.e., we are not just trying to find one person somewhere in the country who can provide the product.

And number three, that the product's total installed cost is reasonable.

These guidelines are consistent with the overall thrust of the 1988 Act. The government needs to act consistent with market principles and standards in doing its procurement and construction, but that there will always be some examples of inefficiencies or market sensitivities where a particular part of the industry may not be moving as quickly to the metric system.

We also believe that these guidelines, in and of themselves, are not the only answer. That is why the Undersecretary and the Department are working closely right now with the General Services Administration, the Department of Defense, and particularly the Office of Management and Budget's Office of Federal Procurement Policy in making sure that these guidelines are effectively communicated down to the lowest levels so that we can pursue, in effect, a metric policy and use commercially available products.

Let me turn to the Administration's concerns over H.R. 2779.

The Chairman of this Committee received a letter from Mr. Steve Kellman, who runs the Office of Federal Procurement Policy, in March, outlining the Administration's views on the bill.

I believe I was told that that was already submitted for the record.

The Administration continues to be concerned about H.R. 2779, because we believe, contrary to the earlier discussion, that it would in fact prohibit the Federal Government from specifying the use of metric products in federal construction projects.

The Administration also opposes H.R. 2779 because we believe that the burdens that it would impose upon the Federal procurement process and the negative effect that it would have on the use of the metric system in the Federal procurement process are untenable.

We believe that this bill would increase bureaucratic inefficiency and paperwork by requiring each agency to prepare and annually update a list of appropriate representatives for each affected industry.

These representatives would be authorized by the bill to make certifications regarding the availability of metric products from domestic manufacturers, the level of production of hard metric products by affected industries, and the estimated cost and hardship that small business manufacturers in particular would incur in converting to production of hard metric products.

Agencies would be prohibited from specifying the use of metric products in federal construction contracts and federally-assisted construction contracts under the bill if a designated representative for the affected industry certifies that hard metric products are not readily available from domestic manufacturers or that affected small business manufacturers would encounter special hardship.

Unfortunately, the unnecessary cost burdens imposed by H.R. 2779 contrast sharply with the already existing flexibility and sensitivity of the existing statute.

Under the current federal law, the flexibility exists today to exempt the use of metric measurements where such use is impractical or is likely to cause significant inefficiencies or loss of markets for U.S. firms.

It is not the Administration's intent to unduly burden American firms in this area. But instead, to pursue metrication for increased cost-effectiveness for American business, efficiency in procurement and greater access to international markets.

That is why the Interagency Council for Metric Policy, which the Undersecretary chairs, produced the guidelines which are now a part of your record.

Emphasize—the current law provides the flexibility to exempt federal agencies from the use of metric where such use is impractical or will cause significant inefficiency.

Moreover, this new guidance, what we would like to see is increased coordination through ICMP and the Office of the Undersecretary and our commitment to helping U.S. business stay competitive will address the concerns, I believe, of the modular construction industry.

To summarize, H.R. 2779 is not necessary and its passage will only damage the efforts of the remainder of the industry while harming the ability of the U.S. Government to do its work in a cost-effective manner.

Thank you, Madam Chairwoman.

Mrs. MORELLA. Thank you, Mr. Bohannon.

Mr. Brenner?

[The prepared statement and attachments of Mr. Bohannon follow:]

TESTIMONY OF

UNDER SECRETARY OF COMMERCE FOR TECHNOLOGY

MARY L. GOOD

Before the House Subcommittee on Technology
of the House Committee on Science

"H.R. 2779, Savings in Construction Act of 1995"

May 16, 1996

Madam Chairwoman and Members of the Subcommittee, I am Mary Good, Under Secretary of Commerce for Technology. The Department of Commerce has a key role to play in addressing technology, information and global competition. The Department's primary mission is to ensure economic opportunity and a high standards of living for all Americans through economic growth and job creation, promotion of trade, and advances in technology.

I am pleased to discuss the Department's and some of the Administration's metric conversion activities. Madam Chairwoman, let me first state that the Federal Government is not mandating metric use in the private sector, but it is seeking to serve as a catalyst in the metric conversion of this country's trade, industry, and commerce. The goal of the Department of Commerce and the Federal agencies is to pursue metrication for increased cost-effectiveness and productivity in U.S. business and greater access to international markets while avoiding any undue burden on American firms.

As you know, it is this Administration's policy to support procurement of commercially available products, as well as pursue a strong metric policy. For the most part, these policies are extremely consistent, as country has made -- and will continue to make -- great strides towards using the metric system over the last decade. Some notable examples include the automobile and tool industries. The construction industry, too, is largely metric -- with some exceptions, in particular those noted in the modular construction industry.

In order to address these exceptions, the Department of Commerce has this week issued Guidelines for the Federal Agencies to address the unique needs of the modular construction industry. Among other provisions, these guidelines direct agencies to conduct market research to determine the availability of modular construction products before developing new product specifications. The guidelines also state that modular construction projects should only be specified in a federal construction project for situations in which three criteria are met: (1) the product's application physically requires it to be sized as hard metric; (2) market research has shown that the product is commercially available; and (3) the product's total installed cost is reasonable.

We are working closely with the General Service Administration (GSA), Department of Defense (DOD) and the Office of

Management and Budget (OMB) to ensure that the application of the Administration's metric policy is fairly and effectively administered.

In the Omnibus Trade and Competitiveness Act of 1988, Congress declared the metric system to be the preferred system of measurement for U.S. trade and commerce. These amendments to the Metric Conversion Act maintain that the Federal Government has a responsibility to assist industry, especially small business, as it voluntarily converts to the metric system of measurement. The law requires Federal agencies, with certain exceptions, to use the metric system in their procurements, grants, and other business-related activities.

President Bush in 1991 through Executive Order 12770, "Metric Usage in Federal Government Programs," tasked the Secretary of Commerce to lead and coordinate efforts by the Federal agencies to use the metric system. The Interagency Council on Metric Policy (ICMP)provides policy guidance and coordination. All executive departments and agencies have designated a senior policy-level official to act as their representative to the ICMP. These officials, known as the agencies' Metric Executives, are responsible for metrication planning and leadership in their agencies. The ICMP has developed guidance for the Federal agencies on the use of the metric system in acquisitions and in financial assistance activities.

As a whole, the Federal agencies continue to make progress in their individual metric conversion programs. Each agency has developed an internal metric transition plan to implement metric use in its measurement-sensitive activities, acquisitions, and regulations. The agencies are working with their public sector customers and with industry to facilitate adoption of the metric system in the United States.

The Interagency Council on Metric Policy and the NIST Metric Program are implementing new initiatives that focus on listening to industry, states, and the private sector to help develop joint agendas for an accelerated national transition to the metric system of measurement. These initiatives seek to create greater understanding and a more favorable environment for national metrication by gaining broad-based support from industry and the general public. Under the banner "Toward a Metric America," a series of regional metric town meetings and workshops seeks to build state and regional partnerships to (1) accelerate adoption of the metric system in trade and commerce, (2) encourage use of the metric system

in all facets of education, including honing of worker skills, and (3) develop positive and enjoyable programs of public awareness.

Department of Commerce activities

The Department of Commerce has two primary metric transition assignments:

> Interagency: Lead and coordinate the metric transition activities of all Federal agencies, and
>
> Internal: Convert measurement-sensitive programs and functions that relate to trade, industry, and commerce to predominant use of the metric system.

The Department's Metric Program, located in the Technology Administration's National Institute of Standards and Technology, leads and directs the Department's metric transition activities. The Metric Program prepares guidelines, plans, and reports for both the Department's interagency and internal metric transition efforts. The Metric Program chairs the interagency Metrication Operating Committee and its Steering Group and oversees the activities of its functional subcommittees. The Metric Program also acts as secretariat to the Interagency Council on Metric Policy, which is chaired by the Under Secretary for Technology. For internal metric transition efforts, the Metric Program chairs the Department of Commerce Metric Committee.

I have been designated as the Department's Metric Executive to guide and coordinate the Department's interagency and internal metric transition activities. I chair the Department of Commerce Metric Committee (CMC), which is composed of the metric coordinators of Departmental offices and operating units. The CMC is the forum for coordinating internal metric usage and for sharing experiences.

In February 1994, the Secretary signed the "Department of Commerce Metric Transition Plan." In addition to tasks relating to interagency leadership and coordination of government-wide metric transition activities, this Plan establishes the framework and the timetables for metric transition within the Department. The Plan assigns specific

responsibilities and target dates for the full implementation of metric usage in all Departmental programs and functions. Under the Plan, the Departmental offices and operating units have detailed individual metric transition objectives, responsibilities, and supplemental activities to complete conversion in the Department. The Commerce Department offices and operating units also have individual metric transition plans that include timetables and completion dates for their metric conversion implementation.

H.R. 2779, Savings in Construction Act of 1995

The Administration continues to oppose passage of H.R. 2779. H.R. 2779, the "Savings in Construction Act of 1995" would prohibit the Federal government from specifying the use of metric products in Federal construction contracts.

The Administration opposes H.R. 2779 because of the burdens it would impose upon the Federal procurement process and the negative effect it would have on the use of the metric system in Federal procurement. The Administration believes that this bill would increase bureaucratic inefficiency and paperwork by requiring each agency to prepare and annually update a list of appropriate representatives for each affected industry. These representatives would be authorized by H.R. 2779 to make certifications regarding the availability of metric products from domestic manufacturers, the level of production of "hard metric" products by affected industries, and the estimated cost and hardship that small business manufacturers would incur in converting to production of hard-metric products. Agencies would be prohibited from specifying the use of metric products in Federal construction contracts and federally assisted construction contracts if a designated representatives for the affected industry certifies that "hard metric" products are not readily available from domestic manufacturers or that affected small business manufacturers would encounter special hardship.

The unnecessary cost burdens imposed by H.R. 2779 contrast sharply with the already existing flexibility of the existing statutes. Under current Federal law, the flexibility exists today to exempt the use of metric measurements where such use is impractical or is likely to cause significant inefficiencies or loss of markets for U.S. firms. It is not the Administration's intent to unduly burden American firms in this area, but instead to pursue metrication for increased

cost effectiveness for American business, efficiency in procurement, and greater access to international markets.

The Interagency Council on Metric Policy, which I chair, has taken steps to implement a uniform federal policy in the treatment of modular construction products in light of industry recommendations on implementation of our nation's metric policy. Working with the Construction Metrication Council of the National Institute of Building Sciences, we are closely examining how best to respond to the request for help.

Current law provides for flexibility to exempt federal agencies from the use of metric where such use is impractical or will cause significant inefficiencies or loss of markets for U.S. firms.

Moreover, new Guidance, increased coordination through the ICMP, and our commitment to helping U.S. business stay competitive will address the concerns of the modular construction industry.

H.R. 2779 is unnecessary, and its passage will only damage the efforts of the remainder of the industry, while harming the ability of the U.S. government to do its work.

UNITED STATES DEPARTMENT OF COMMERCE
The Under Secretary for Technology
Washington, D.C. 20230

MAY 15 1996

The Honorable George Brown
Ranking Member
Committee on Science
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Brown:

I wanted to follow up to my earlier letter to you, in which I assured you that the we would be taking a close look at a uniform federal policy relating to use of metric requirements for modular construction products.

The attached guidelines are the first step in the process in responding to your request. The guidelines are the product of the Interagency Council on Metric Policy, and are being disseminated to every department and agency. We are working closely with the Office of Management and Budget to assure that these guidelines are communicated effectively to the responsible procurement officials. They are also being produced in the Federal Register for the general public to have knowledge of the results of the interagency process.

The 1988 Metric Conversion Act seeks to ensure that our nation moves effectively toward the use of the metric system as a means of promoting our international competitiveness. Nothing in these guidelines changes that direction of policy as a priority. The 1988 Act envisioned, however, that there might be impracticalities or possible significant inefficiencies or loss of markets for U.S. firms as we move toward a broader use of metric measurements.

These guidelines reflect the administrative flexibility that the 1988 Act anticipated. In the case of modular construction products, the presumption has been shifted to meeting specific criteria before metric requirements can be used in construction product specifications.

I look forward to working with you and others in the Committee as we implement these guidelines.

Sincerely,

Mary L. Good

DEPARTMENT OF COMMERCE

Technology Administration
[Docket No. 960508127-6127-01]
RIN: 0693-XX18
FEDERAL AGENCY GUIDANCE FOR THE ACQUISITION OF MODULAR METRIC CONSTRUCTION PRODUCTS

AGENCY: Technology Administration, U.S. Department of Commerce

ACTION: Publication of Federal Agency Guidance

SUMMARY: These guidelines provide information and a policy statement for Federal agency implementation of metric-usage requirements in the acquisition of modular construction products. After a review process starting on April 12, 1996, the guidelines were approved by the Interagency Council on Metric Policy on May 03, 1996.

FOR FURTHER INFORMATION CONTACT: Mr. Ralph Richter, Metric Program, U.S. Department of Commerce, National Institute of Standards and Technology, Building 820, Room 306, Gaithersburg, MD 20899. Phone (301) 975-3690.

SUPPLEMENTARY INFORMATION:

Background

The Omnibus Trade and Competitiveness Act of 1988 (Public Law 100-418, section 5164) amended the Metric Conversion Act of 1975 to, among other things, require that each Federal agency use metric measurements to the maximum extent feasible in its procurements and business-related activities. To fully implement this legislation within the Federal agencies, Executive Order 12770, "Metric Usage in Federal Government Programs," was signed

by President Bush in 1991. The Federal agencies are required to encourage and support an environment that facilitates the U.S. transition to the metric system of measurement.

Using the Executive Order and the 1988 amendments as guidance, the agencies involved in the construction of federal buildings and facilities have made substantial progress in the adoption of metric measurements. During this metrication process, the Government's construction agencies have worked closely with the private sector to reach a consensus among all of the interested parties: building material manufacturers, trade associations, design firms, and construction contractors.

Dimensions for the vast majority of construction products need only be "soft-converted" for use in metric construction projects. A soft metric conversion means that the physical dimensions of the product remain unchanged while the measurement units used to describe and specify the product are changed to metric units. To make metric construction succeed, however, a small percentage of products need their physical dimensions "hard-converted" to fit the product into the internationally recognized building module of 100 millimeters. These products are frequently referred to as modular products.

Just as it is logical and cost effective for inch-pound construction projects to use modular products that fit into the 4-inch module, it is logical and cost effective for metric construction projects to employ modular products that fit into the 100 mm module.

Modular construction products are brick, concrete block, suspended ceiling systems -- including recessed lighting fixtures and air diffusers, raised access flooring, wallboard, plywood, particle board, and rigid insulation.

Before a modular construction product in a hard metric size is specified in a federal construction project, the product's application must require it to fit together with other modular metric components, and the product must be found to be available at a reasonable cost.

The statutory language in the 1988 legislation provides the necessary flexibility for appropriate implementation of this policy on modular construction products -- the Federal agencies are required to forego metric conversion when it is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms. The intent of the law is to pursue metrication for increased cost-effectiveness and productivity in U.S. business and greater access to international markets while avoiding any undue burden on American firms.

General Policy

(a) As construction metrication efforts continue, the Government's construction agencies shall continue to work closely with all interested private sector parties: building material manufacturers, trade associations, design firms, and construction contractors. Consensus, efficiency, and cost-effectiveness shall be the goal.

(b) The Federal agencies shall conduct market research to determine the availability of modular metric construction products before developing new procurement specifications. Procurement officials in each agency, to the maximum extent practicable, shall specify commercial items or nondevelopmental items other than commercial items to meet the needs of the agency.

(c) Throughout the acquisition process, the Federal agencies shall ensure that they give due consideration to the known

effects of their actions on State and local governments and the private sector, paying particular attention to effects and possible cost burdens on small business.

(d) Modular construction products in a hard metric size shall only be specified in a federal construction project for situations in which the following criteria are met: (1) the product's application requires it to coordinate dimensionally into the 100 millimeter building module, (2) market research demonstrates the product's availability, sufficient to ensure competitive process, and (3) the product's total installed cost is reasonable.

Guidelines for Specific Modular Construction Products

A large portion of the language in this section is credited to the *Guide for Specifying Metric Modular Products*, a recently-developed draft document available from the Construction Metrication Council of the National Institute of Building Sciences. The Institute is a private, nonprofit organization created by Congress to serve as an authoritative source on issues of building science and technology.

Both the public and private sectors are working together to resolve building product metrication issues through the Construction Metrication Council. With broad support and participation of the private sector, the Council develops guidelines and recommends procedures to adopt the metric system of measurement as a means of increasing the international competitiveness, productivity, and quality of the U.S. construction industry. The Council works closely with the Interagency Council on Metric Policy to disseminate this information to the Federal agencies.

Steel Reinforcing Bar

Steel reinforcing bar is not considered to be a modular construction product because it is buried in concrete and is not required to coordinate dimensionally into the 100 mm building module.

Specifications for steel reinforcing bar are issued by the American Society for Testing and Materials (ASTM), a private sector standards-making organization. In 1979, ASTM first issued its International System of Units (SI) "hard metric" specification for steel reinforcing bar, ASTM A 615M. After receiving assurances from the steel industry that reinforcing bar conforming to ASTM A 615M would be supplied when it was specified and ordered, Federal agencies adopted this standard for their metric construction projects.

Starting in May 1995, the Concrete Reinforcing Steel Institute (CRSI) and the Steel Manufacturers Association (SMA) mounted a campaign to endorse, instead of ASTM A 615M, a soft metric conversion of the current inch-pound specification, ASTM A 615. Most steel companies support the position that a soft metric conversion of ASTM A 615 should be adopted as the steel reinforcing bar standard for metric construction projects. Since the summer of 1995, it has been recommended that the Federal agencies specify bar conforming to a soft metric conversion of ASTM A 615 for projects still in design and that they allow soft-converted substitutions for work ready to bid.

The American Society for Testing and Materials is in the process of revising its standard for steel reinforcing bar to reflect the steel industry's support for a soft metric conversion of this product. The industry has pledged to provide complete metric design information, data, and specifications to both

public and commercial users of steel reinforcing bar that conforms to a soft metric conversion of ASTM A 615.

Brick

The American Society for Testing and Materials' *Standard Guide for Modular Coordination of Clay and Concrete Masonry Units*, ASTM E 835/E 835M, sets forth metric dimensions for brick based on a module of 100 mm. Many common brick sizes are within a millimeter or two of metric modular sizes and nearly all can fit within the 100 mm module vertically by slightly varying mortar joint widths. The Brick Institute of America supports metrication.

A table that can be used to specify common brick sizes in metric units is available from the Construction Metrication Council of the National Institute of Building Sciences.

Concrete Block

Concrete block is usually considered a modular product. The Government's construction agencies, however, are aware of the costliness to the concrete masonry industry of buying the molds needed to produce concrete block in hard metric sizes and are attempting to minimize this expense. Inch-pound (soft-converted) block substitutions are recommended in all cases in which concrete block is used as a backup or infill material and in which architectural considerations otherwise permit.

Concrete block in a hard metric size will only be specified in a federal construction project in cases in which the block will be located in an architecturally exposed area or will be required to fit together with other modular metric components. The concrete block must also be found to be available at a reasonable cost. The Corps of Engineers has stated that approximately 60 percent of the cost of a concrete block wall is

labor, 25 percent is the concrete block, and 15 percent is for other materials such as mortar and reinforcement. In projects for which concrete block in a hard metric size is needed, allowing inch-pound (soft-converted) block may save on the cost of the block, but would substantially increase the amount of cutting and trimming and would unreasonably increase labor costs. Therefore, in certain circumstances, it is logical and cost effective for the Government to specify concrete block in a hard metric size.

Total installed cost should be the determining factor in the selection of concrete block. Most often, concrete block is used as a back-up or infill material; when this is the case, inch-pound block substitutions are recommended. Where concrete block in a hard metric size is considered for use as an architectural material or as a primary structural system, cost and availability should be determined in advance to judge the appropriateness of such use.

Suspended Ceiling Systems

Components for suspended ceiling systems are T-bars, hangers, ceiling tile, recessed lighting fixtures, and recessed air diffusers. All components are available in modular metric sizes from a variety of manufacturers. With the exception of recessed lighting fixtures, all components are priced competitively with their inch-pound counterparts. A few large lighting manufacturers with highly automated production processes oppose metrication, and the product may carry a slight cost premium. Even so, quality modular metric lighting fixtures continue to be procured without difficulty when specified in federal projects.

Cost and availability shall be determined when components for suspended ceiling systems are specified in modular metric sizes.

Raised Access Flooring

Raised access flooring is a specialty item used primarily in computer rooms and other areas where provision for under floor cabling is desirable. A number of manufacturers make raised access flooring to fit the 100 mm module, but there may be a cost premium for small orders and longer delivery times for all orders. The Federal agencies shall specify metric raised access flooring if costs are generally comparable to inch-pound access flooring and procurement lead times are acceptable.

Wallboard

Wallboard is formed in continuous sheets of variable widths and cut to specified lengths. A variety of manufacturers make wallboard to fit the 100 mm module (1200 mm wide and 2400 and 3000 mm long), but there may be a cost premium for small orders and longer delivery times for all orders since metric wallboard is not yet a stock product. While the use of metric wallboard is desirable in metric construction projects, its use is not mandatory on small projects if project length or cost will increase.

Where framing spacing is specified to fit modular metric construction, the Federal agencies shall specify wallboard sheet type and thickness without specifying length and width. The construction contractor shall make the decision whether metric wallboard sheets or trimmed inch-pound sheets offer the most efficient and cost-effective solution in each situation.

Plywood and Particleboard

Like wallboard, wood-based sheet products such as plywood, particleboard, and oriented-strand-board (OSB) can be produced in a 1200 mm width and 2400 and 3000 mm lengths. There may be a premium for small orders and longer delivery times for all orders

since metric plywood, particleboard, and oriented-strand-board are not yet stock products. With the exception of military family housing, however, wood products are rarely used in Government facilities.

Where framing spacing is specified to fit modular metric construction, the Federal agencies shall specify sheet type and thickness without specifying length and width. The construction contractor shall make the decision whether metric sheets or trimmed inch-pound sheets offer the most efficient and cost-effective solution in each situation.

Rigid Insulation

Rigid insulation is used on exterior walls and as a roof underlayment. Currently this material is available only in inch-pound sizes and must be cut to fit 400 or 600 mm framing spacing. On roofs, the product is usually laid over a rigid substrate that allows any sheet size to be used. The Federal agencies shall specify sheet type and thickness without specifying length and width. Where the sheets are applied directly to 400 or 600 mm framing spacing, the width must be trimmed by the contractor.

Further Guidance

Further guidance on the federal acquisition of modular metric construction products is available from the Construction Metrication Council of the National Institute of Building Sciences. Guidance is also available from the General Services Administration and its *Metric Design Guide*.

Mary L. Good

Mary L. Good
Under Secretary for Technology

_____
Date

STATEMENT OF WILLIAM A BRENNER, DIRECTOR, CONSTRUCTION METRICATION COUNCIL, WASHINGTON, DC

Mr. BRENNER. Good morning. Well over a billion dollars in federal metric projects are under construction or completed already. And as the Canadians predicted, they have cost virtually no more money than conventional construction, whether or not hard metric products are used, despite some seriously misleading claims to the contrary.

For the record, almost all the major federal projects to date have come in under budget.

And why not?

Few things change except the paperwork and a handful of modular products, most of which cost no more than conventional ones. In fact, only two products are at issue—recessed lighting fixtures used only in suspended ceilings and concrete block.

People ask, why are modular hard metric products even needed? In simple buildings, they aren't, and many federal projects don't use them at all.

But where dimensional coordination is required among building components, such as between a light fixture and a ceiling grid or between a block wall and a structural grid, use of modular metric products is often the more logical, efficient, and cost-effective way to build.

Now, no one wants to see metrication cause economic dislocation, period. But to date, the feds have had little trouble finding firms willing and able to make and install modular metric products at reasonable cost, as the following testimony will show.

With all due respect and sympathy to the previous panel, no firms we know of are losing money on metric, nor do we honestly believe they will lose money over the next ten to 20 years that it will take to gradually convert the entire U.S. construction industry to the measurement system used by the rest of the world.

So why is H.R. 2779 before us?

That's what most of the construction industry would like to know. I have in my hand, and we've already discussed this, copies of letters to this Subcommittee, and more are coming, from many of the nation's most prestigious construction organizations and firms, representing hundreds of thousands of professionals.

The letters are absolutely pro-metric and most openly state that they are unequivocally against this bill. None support it.

That said, we will work hard to develop an administrative solution to the problems of the block and recessed lighting fixture industries. Thank you.

Mrs. MORELLA. Thank you, Mr. Brenner, for your concise testimony. Mr. Cunningham?

[The prepared statement of Mr. Brenner follows:]

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Construction Metrication Council

Remarks Before the Subcommittee on Technology
Committee on Science
U.S. House of Representatives

by William A. Brenner, AIA
Construction Metrication Council
National Institute of Building Sciences

H.R. 2779, *Saving in Construction Act of 1995*

Thursday, May 16, 1996
10:00 a.m.
2318 Rayburn House Office Building
Washington, D.C.

The Cost of Metric Construction

These remarks concern H.R. 2779, *Savings in Construction Act*. Of the hundreds of types of products used in the construction industry, only the manufacturers of two, concrete block and recessed lighting fixtures, are promoting H.R. 2779. They contend that the use of hard metric construction products increases the costs of Federal construction 15 to 20 percent, but this simply does not reflect Federal experience to date.

Well over a billion dollars worth of Federal metric projects have been bid and are under construction. *Metric construction has been shown to cost the government virtually no more money than conventional inch-pound construction, whether or not hard metric products are used.*

Why is this? For one thing, construction is performed in exactly the same way by the same people with the same skills. For another, just a *handful* of modular metric products change size, with most costing no more than conventional products. In fact, only the costs of concrete block and recessed lighting fixtures are at issue.

While metric recessed lighting fixtures are said to be more expensive to produce, they typically constitute less than one percent of the cost of an average building. So even an increase of 10 to 20 percent in the cost of *producing* lighting fixtures would add only a tiny fraction of a percent to the building's price, and that's assuming the full cost increase is passed from the manufacturer to the distributer, from the distributer to the electrical subcontractor, from the electrical subcontractor to the general contractor, and from the general contractor to the owner -- highly unlikely in the intensely competitive construction industry where the low bidder gets the job.

Concrete block faces similar competitive pressures but, depending on a building's design, the installed cost of metric block may be no higher than that of conventional block. At any rate, metric block has been specified predominantly on only the larger Federal projects and, where it can't be obtained at a reasonable cost, regular block is substituted.

In summary, while common sense tells us that there must be *some* cost associated with metrication, we can't see it on the bottom line of Federal construction awards, despite claims to the contrary. In fact, almost all the major metric jobs have come in under budget.

Simple economics tells us that when there is demand for a product, people will compete to supply it, and in fact the government has had little trouble finding people willing and able to supply and install modular hard metric products at reasonable costs.

H.R. 2779

In this context, H.R. 2779 is an unwise tampering with market forces. It will *increase*, not decrease, Federal construction costs by:

- Reducing the government's ability to build logically and efficiently with modular metric products.
- Creating more government regulations and red tape.
- Allowing some members of an industry to block the use of products that other members are willing and able to provide.

H.R. 2779 presents a major departure from Federal procurement policy and creates more problems than it solves, including the potential for protracted litigation.

In addition, it once again sends a signal to the entire construction industry that the government is flip-flopping on a major policy issue.

The enclosed white paper on this subject explains the Council's position on H.R. 2779 more fully.

THE METRICATION OF CONCRETE BLOCK

(and Other Modular Products Such as Recessed Lighting Fixtures and Reinforcing Steel)

An Overview by the
Construction Metrication Council of the
National Institute of Building Sciences

Background

The metric conversion of federal construction programs, in accordance with the 1988 amendments to the 1975 *Metric Usage Act* and Executive Order 12770, is nearly complete. (Appendix A describes the history and status of construction metrication.) Hundreds of millions of dollars of metric projects have been placed under construction in the past four years and the results speak for themselves:

- Metric conversion is much less difficult than originally anticipated.
- Design and construction costs do not increase appreciably.
- Architects and engineers like working with metric units because they are easier to use and less prone to error.
- Tradesmen adapt readily to using metric measurements on the job site.
- Construction problems have been minimal.
- A broad cross section of the U.S. construction industry supports metrication.

To date, only three metric-related construction issues have surfaced, all in the product area. Two of them -- recessed lighting fixtures and concrete block -- involve **dimensional coordination**. The third, reinforcing steel, does not.

The concept of dimensional coordination requires a brief explanation. In the construction industry, the term *soft metric* usually refers to an inch-pound product that is relabeled in metric units but does not change size. The term *hard metric* usually refers to a product that changes to a new, rational metric size. **Of the thousands of products used by the construction industry, only a handful -- mostly those that are *modular* in nature and must be *dimensionally coordinated* with other building components -- change to a new "hard metric" size.**

These modular products are brick, concrete block, suspended ceiling components, raised flooring components, and sheet goods such as wallboard, plywood, particleboard and rigid insulation.

Worldwide, modular inch-pound products are based on a **4-inch module** and modular metric products are based on a **100 mm module**. Common 4-inch multiples are **8 inches** for brick, **16 inches** for block, **16 and 24 inches** for stud and joist spacing, **24 inches** for suspended ceilings and raised floors, and **48 and 96 inches** for drywall and plywood.

The metric equivalents to these multiples are **200 mm** for brick, **400 mm** for block, **400 and 600 mm** for stud and joist spacing, **600 mm** for suspended ceilings and raised floors, and **1200 and 2400 mm** for drywall and plywood.

For metric projects, then, it is logical and efficient to use products that fit the 100 mm module, just as it is logical and efficient for inch-pound projects to use products that fit the 4-inch module.

With this preface, the three metric-related product issues are as follows:

- ***Reinforcing steel ("rebar")***. The rebar industry first promoted and then withdrew a metric standard but not before most state highway departments had adopted it in their standard design drawings and not before rebar based on this standard was used in a major federal project. The rebar industry currently is balloting, through the American Society for Testing and Materials (ASTM), a new metric standard and hopes to unify support for it over the next year or so. Rebar is not a modular product (it is buried in concrete) and its sizes are considered to be primarily an industry issue.
- ***Recessed lighting fixtures***. Several lighting manufacturers have opposed the introduction of modular metric recessed fixtures for use in modular metric suspended

ceiling systems. However, such fixtures proved to be readily available from other manufacturers, and now the opposing manufacturers are supplying them too. All other suspending ceiling components, including T-bars, lay-in tiles and air diffusers, are available from a variety of manufacturers in modular metric sizes at competitive prices.

- *Concrete block* Block is also a modular material, but modular metric (so-called "hard metric") block is slightly smaller than current inch-pound block. The National Concrete Masonry Association (NCMA) argues that producing two sizes of otherwise identical block is too costly for the smaller producers that constitute the bulk of the block industry. The NCMA further argues that inch-pound block can be cut to fit any dimension, inch-pound or metric. Finally, the NCMA argues that block is used most often as an infill or backup material and thus the architectural problem of matching block courses and mortar joints with the lines or edges of other building elements is not always important.

  In response to these concerns, the General Services Administration's *Metric Design Guide* (first issued in July 1993) permitted either inch-pound or metric block to be used in metric projects, with total installed cost being the determining factor. The Construction Metrication Council consistently has endorsed GSA's policy and most federal agencies have avoided the specification of metric-only block except for larger projects or where block is otherwise thought to be readily available at a reasonable price. (Appendix B describes the Council's support of the block industry and Appendix C describes the use of metric block in federal projects.)

  Despite this, **the National Concrete Masonry Association, with its majority membership of small block producers, has taken the position that *no* metric block should be specified in federal construction** and has lobbied Congress accordingly.

The Council's Position on Block Metrication

The Construction Metrication Council agrees with the NCMA position that where block is used as a backup or infill material, inch-pound block substitutions should be allowed. The Council also believes, however, that a ban on the specification of metric block will **eliminate the use of block for many architectural and structural purposes on federal jobs and encourage the substitution of competing materials**. Therefore, the Council advocates the continued specification of metric block where circumstances warrant. For instance, the Army Corps of Engineers is currently involved in a $32 million barracks project that incorporates metric block as an exposed architectural material. The Corps argues that for projects of this scale, the extra cost to the producer for making metric block will be readily amortized and that the block's total installed cost will be significantly less than if inch-pound block were used due to the extra costs involved in cutting and fitting inch-pound block for a building with metric dimensions.

Furthermore, **the Council believes that federal metrication's impact on the block industry will be small.** Federal construction constitutes about 10 percent of all U.S. construction and about half of this 10 percent goes to roads, civil works, and other nonbuilding projects where block is rarely used. Of the remaining 5 percent, only a small portion involves building types where block is used architecturally or as a primary structural system. As the block industry itself points out, its product is used predominantly as a backup or infill material where appearance is not a major consideration. Obviously, for nonarchitectural applications, either inch-pound or metric block can be used.

Finally, 93 percent of the world's population builds in metric measures and the construction industry currently is undergoing rapid globalization -- as a visit to any hardware store, with its steadily increasing number of products in multilingual packages marked in metric measurements, readily demonstrates. **It is only a matter of time before the U.S. construction industry joins the nation's automobile, health care, and electronics industries (among others) in converting to the metric system.**

The Council therefore expects that the U.S. block industry eventually will adopt the metric system, along with the balance of the U.S. construction industry, as an inevitable result of the globalization of construction and its metric-based system of measurement. Federal metrication efforts present an unprecedented opportunity to execute a smooth and timely transition.

Because of the costs of conversion to small block producers, however, the Council continues to advocate that: **Where block is used as a backup or infill material or where architectural considerations otherwise permit, federal construction documents should allow inch-pound substitutions, with total installed costs to the contractor being the determining factor. Where metric block is considered for use as an architectural material or as a primary structural system, cost and availability should be determined in advance to judge the appropriateness of such use.**

Bills Currently Before Congress: S. 1386 and H.R. 2779

On November 1, 1995, Senator Burns of Montana entered into the *Congressional Record* a letter from the National Concrete Masonry Association opposing the use of "hard

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metric" block in federal construction projects. The following day Senator Burns and Senator Shelby of Alabama introduced Senate bill 1386. On December 14, 1995, Congressman Cox of California submitted a similar bill, H.R. 2779.

S. 1386 and H.R. 2779 **prohibit** federal specification of any metric product (defined in the bill as "hard metric") if an analogous, metric-labeled inch-pound product (defined in the bill as "soft metric") can be produced and the affected industry certifies:

> -- that the metric product is not readily available from at least half of all domestic manufacturers, or
>
> -- the metric product does not amount to more than half the industry's current production, or
>
> -- the metric product would cause small businesses to incur capital outlays of over $25,000 to produce it.

The bills require each agency to prepare and annually update a list of "appropriate representatives of an industry that may make certification." Listed industries then could submit certifications that their products meet the above criteria.

Such legislation implies a limited number of construction products and a handful of industry organizations, each able to represent all the manufacturers within that industry and to obtain unanimous agreement on the provision of metric products. This, of course, is not the case. There are thousands of construction products and hundreds of construction-related industry organizations. Few if any represent all members of a specific industry or concern, and there are few issues upon which all members of any industry completely agree. The concrete block industry is one such example.

Thus, S. 1386 and H.R. 2779, **designed to protect small block manufacturers, would impose huge administrative burdens on federal construction programs as each agency attempted to establish lists of appropriate industry representatives for the thousands of products used in construction and as each agency attempted to process certification applications and manage the inevitable challenges thereto by dissenting manufacturers.**

Modular metric products other than concrete block that would be affected include suspended ceiling and raised flooring components as well as sheet goods such as wallboard, plywood, particle board, and rigid insulation -- many of which are already on the market and are being used in federal work. Moreover, an unknown but possibly large number of *non-modular* construction products, such as structural fasteners, are made in rational metric sizes now and also could be affected. Such products conform to International Standard Organization (ISO) or similar requirements but are labeled in inch-pound units for U.S. markets (an everyday example of this is the so-called 3-1/2-inch floppy disk which is manufactured to a world-standard dimension of exactly 90 mm). **The administrative burdens caused by S. 1386 and H.R. 2779 could preclude federal use of all metric products and seriously impair the U.S. construction industry's ability to buy and sell such products in the international marketplace.**

The Council's Position on S. 1368 and H.R. 2779

The Construction Metrication Council opposes S. 1368 and H.R. 2779 because.

1. The industry certification process would pose an **unmanageable administrative burden and its interference in federal procurement would be unprecedented.**
2. In accommodating a portion of the block industry, the bills would **skew the workings of the free market system** and place a heavy burden on product manufacturers who make and market metric products now as well as those who wish to do so in the future. In this respect, the bills **constitute a restraint of trade.**
3. By discouraging the use of rationally dimensioned metric products in federal construction, the bills would **reduce the government's ability to build logically and efficiently and thereby increase long-term federal construction costs.**
4. The net effect of the bills would be to **impede the metrication of the U.S. construction industry and reduce its potential competitiveness in a metric world.** At 8 percent of the nation's GNP and with 6 million workers, the construction industry's competitiveness affects the quality of life of all Americans.

This said, **the Council remains aware of the impact of metrication on the block industry and, in lieu of passage of these bills, will continue to advocate that federal agencies allow inch-pound block substitutions wherever appropriate, as described above.**

Additional Information

The following appendices contain additional information:

Appendix A, History and Status of Construction Metrication

Appendix B, History of Council Support for the Block Industry

Appendix C, The Use of Metric Block in Federal Projects

Appendix D, The Construction Metrication Council: A Public-Private Partnership

January 22, 1996

Appendix A

HISTORY AND STATUS OF CONSTRUCTION METRICATION

1975 Metric Usage Act

After the passage of the *Metric Usage Act* in 1975, many of the nation's construction codes, standards, professional, and trades organizations began adding metric units to their publications in anticipation of the construction industry's adoption of the metric system. The National Institute of Standards and Technology (then known as the National Bureau of Standards) instituted a variety of studies of construction metrication, one of which formed the basis for ASTM E621, *Standard Practice for the Use of Metric (SI) Units in Building Design and Construction*, the U.S. construction metrication standard. Under the auspices of the American National Metric Council, construction sector representatives met regularly to prepare industry-wide metric conversion plans and schedules. These and other efforts involved a broad cross-section of the construction industry over a period of about five years. By the early 1980s, however, federal support for metrication had waned and finally ended with the defunding of the U.S. Metric Board in 1982. This effectively removed the primary catalyst for metrication of the large, decentralized U.S. construction industry.

The 1988 Act and Executive Order 12770

Construction metrication efforts resumed after the passage of the *Omnibus Trade and Competitiveness Act* in 1988. Amendments to the act declared the metric system as the preferred system of measurement in the United States and required that it be used in all federal procurement, grants, and business-related activities to the extent feasible by September 30, 1992. The intent was to make the United States more competitive in international trade by bringing its measurement system into line with that of the rest of the world. In July 1991, President Bush issued Executive Order 12770, *Metric Usage in Federal Programs*, requiring federal agencies to develop specific timetables and milestones for completing the metrication process.

The January 1994 Goal

In April 1992, the federal agencies involved in construction met under the auspices of the newly formed Construction Metrication Council and set a goal of instituting the use of the metric system in the design of all federal construction by January 1994. The General Services Administration's Public Buildings Service began designing in metric measures three months prior to that date and now has several billion dollars in metric projects in design or under construction. Since then, almost all other federal construction programs have adopted the metric system and most agencies are building new projects in metric units.

Industry Support and Participation

Such progress could not have been made without the construction industry's metrication activities in the late 1970s for these actions laid the technical groundwork for the current federal metrication efforts. The industry has been an active participant in the Construction Metrication Council and most of its major trade and professional organizations have issued pro-metric policies. And, of course, in the past several years, the construction industry has designed, supplied, and built all federally funded metric projects.

The Results

After four years of intensive effort, the results speak for themselves:

- Metric conversion has proven to be much less difficult than anticipated.
- There has been no appreciable increase in design or construction costs.
- Architects and engineers have indicated that they like working with metric units because they are easier to use and less prone to error.
- Tradesmen have adapted readily to using metric measurements on the job site.
- Construction and product problems have been minimal.
- Metrication has been supported by a broad cross section of the U.S. construction industry.

These results parallel the experiences of Canada and other countries that have converted their construction industries to the metric system over the past two decades.

Current Status

The status of federal construction as of November 1995 is presented in the table on the following two pages.

AGENCY	METRIC CONVERSION DATE FOR NEW CONSTRUCTION PROJECTS
General Services Administration	January 1994 GSA's Public Buildings Service builds for several federal agencies. All major projects under its auspices have been constructed in metric for the past two years.
Federal Highway Administration	October 1996/2000 Recent Congressional action has pushed back the FHWA 1996 deadline to 2000, but the majority of states report that they will begin highway construction in metric by October 1996 or sooner. Successful metric projects already have been completed in many states.
Army Corps of Engineers	January 1995 Numerous metric projects are under construction. New work has been designed in metric since January 1994.
Naval Facilities Engineering Command	October 1996 New projects are being designed in metric now.
Air Force	October 1996 New projects are being designed in metric now.
Coast Guard	In phases, beginning January 1996 Several metric projects are underway now.
State Department	State has virtually always built in metric.
National Aeronautics and Space Administration	October 1995 A number of metric projects are under construction and more are in design.
Federal Bureau of Prisons	October 1995 New projects are being designed in metric now.
Architect of the Capitol	January 1994 In-house design and renovation work is performed in metric and the planned Library of Congress storage facility will be built in metric.
Veterans Administration	No date set at this time Five metric projects are in planning. A large GSA-built project is being constructed in metric now.
Smithsonian Institution	January 1994 Virtually all work has been performed in metric for the past two years.
Environmental Protection Agency	No metric policy on construction grants EPA provides water and sewer grants to states and municipalities but is not involved in their construction.
USDA Forest Service	October 1996 The Forest Service's metrication schedule depends in large part on state highway metrication activities.
Department of Energy	January 1994 for major projects Many DOE labs and sites have ongoing metric construction programs.

AGENCY	METRIC CONVERSION DATE FOR NEW CONSTRUCTION PROJECTS
Department of Agriculture	January 1995 Major projects are in metric now
Indian Health Service	January 1994 Numerous metric projects are in design and construction
National Institute of Standards and Technology	January 1994 Major projects are in metric now
U.S. Postal Service (USPS is not a federal agency)	No date set at this time But several metric pilot projects are under way
Administrative Office of the U.S. Courts	January 1994 All new federal courthouses have been built in metric by GSA since 1994
Internal Revenue Service	January 1994 All major IRS buildings are built in metric by GSA, small projects are designed in-house in metric.
Naval Sea Systems Command (Ships and boats use many of the same construction components as buildings, particularly structural steel and mechanical and electrical equipment)	No formal date The metric design of the LPD 17 amphibious assault ship is nearly completed. Two other ships, the SC 21 and the ADC(X), are in the early stages of metric design. NAVSEA's conversion is proceeding on a program-by-program basis

Appendix B

HISTORY OF COUNCIL SUPPORT FOR THE BLOCK INDUSTRY

Following a presentation by the National Concrete Masonry Association (NCMA) at the July 1993 meeting of the Construction Metrication Council, the Construction Metrication Council published the block industry's point of view as well as GSA's position on the subject in an article in its September-October 1993 *Metric in Construction* newsletter. The article closed by stating:

> While the Construction Metrication Council advocates a timely and complete change to metric, its policy calls for each industry to convert to hard metric when it is economically feasible to do so. Because of the cost of hard conversion to the block industry, the Council endorses GSA's policy of permitting the use of either inch-pound or metric concrete block, as project requirements dictate.

The March-April 1995 issue *Metric in Construction* on brick and block addressed the block issue a second time. After noting that metrication poses little difficulty for the brick industry, the newsletter stated:

> This is not the case for concrete block, a product too big to fit within a 100-mm module without changing size. Nominal 8 x 8 x 16-inch concrete masonry units must be resized to 200 x 200 x 400 mm, a 4-mm reduction in height and a 7-mm reduction in length. Consequently, block manufacturers will have to purchase new block molds, maintain dual inventories, and develop ways of distinguishing between similar looking metric and inch-pound masonry units during storage and shipping. To help ameliorate these problems, the General Services Administration's *Metric Design Guide* (July 1993) permits the use of either metric or inch-pound block in metric projects. Inch-pound block may require more cutting and fitting when used in a building built to metric dimensions but GSA's approach gives the block industry more flexibility in adapting to the change.

The September-October 1995 issue of *Metric in Construction*, in discussing modular metric products, emphasized the need to thoroughly research products, suppliers, and costs. In addition, it noted:

> Block is available in some areas in metric sizes. Check suppliers. Be aware that the metric transition is costly for the block industry and many producers may have difficulty bidding on metric block orders. Where block is used as a backup or infill material or where architectural considerations otherwise permit, allow inch-pound substitutions or specify only nominal wall thicknesses and let the contractor choose between inch-pound and metric block.

The November-December 1995 issue of *Metric in Construction* made a similar statement.

Appendix C

THE USE OF METRIC BLOCK IN FEDERAL PROJECTS

No records are kept of the kinds of building materials the government uses in its construction projects, but the year-end reports from the federal agencies presented at the November 1995 meeting of the Construction Metrication Council indicate that relatively few federal projects are requiring the use of metric block

- In some projects, metric block was originally specified but inch-pound block substitutions have been allowed because of the lack of availability or the higher cost of metric block
- In other projects, inch-pound block has been permitted from the beginning.
- In yet other projects, metric block was specified and has been obtained and used without difficulty.

In each case, the type of block used depended on the project's size and location, the reported availability and cost of metric block, and whether or not project designers or contractors judged the use of metric block to be an important factor in the decision-making process.

A project's size is usually important because the costs of new metric block molds cannot be recovered on a small job and metric projects are still too few in number for small producers to count on spreading capital costs over several jobs. Location also appears to be important because the larger block producers, who generally are located in urban areas, have been the most willing to bid on metric jobs. It has been difficult to obtain metric block on small jobs in remote areas.

These findings confirm the results of the General Service Administration's 1993 survey of materials suppliers in which many large block producers indicated they could supply metric block at competitive prices. In fact, there appears to be a dichotomy within the block industry: the small producers generally oppose metrication while the large producers generally do not.

Appendix D

THE CONSTRUCTION METRICATION COUNCIL: A PUBLIC-PRIVATE PARTNERSHIP

Purpose

The Construction Metrication Council of the National Institute of Building Sciences ***provides industry-wide, public and private sector support for the metrication of federal construction and promotes the adoption and use of the metric system of measurement as a means of increasing the international competitiveness, productivity, and quality of the U.S. construction industry.***

The National Institute of Building Sciences is a nonprofit, nongovernmental organization authorized by Congress to serve as an authoritative source on issues of building science and technology. The Institute receives no Congressional appropriations.

Origin

The Council is an outgrowth of the Construction Subcommittee of the Metrication Operating Committee of the federal Interagency Council on Metric Policy. The Construction Subcommittee began meeting in 1989 to further the objectives of the 1975 *Metric Conversion Act*, as amended by the 1988 *Omnibus Trade and Competitiveness Act*. To foster private sector participation in the federal metrication process, the activities of the Subcommittee were transferred to the Council in January 1992.

Membership

Membership in the Council is open to all public and private organizations and individuals with a substantial interest in and commitment to the Council's purposes. Membership currently stands at about 400, approximately a third of which are federal, with the balance composed primarily of major professional and trade organizations and the larger U.S. architectural, engineering, and contracting firms

Activities and Funding

The Council meets bimonthly in Washington, D.C. and publishes the *Metric Guide for Federal Construction*, the bimonthly newsletter *Metric in Construction* (with a direct circulation of 9000), and other metric-related publications. The Council is funded by contributions from federal agencies involved in construction and from supporting private sector organizations.

Leadership

Thomas R. Rutherford, P.E., Department of Defense, chairs the Council.

Members of the Council's Board of Direction are William Aird, P.E., National Society of Professional Engineers; Gertraud Breitkopf, R.A., GSA Public Buildings Service; Ken Chong, P.E., National Science Foundation; James Daves, Federal Highway Administration; James P. Gross, P.E., National Institute of Standards and Technology; Byron Nupp, Department of Transportation (ret.); Arnold Prima, FAIA, American Building Congress; Martin Reinhart, AIA, Construction Information Group/McGraw-Hill; Ralph Spillinger, National Aeronautics and Space Administration; Gerald Underwood, American National Metric Council; Dwain Warne, P.E., GSA Public Buildings Service; Lorelle Young, U.S. Metric Association; Werner Quasebarth, American Institute of Steel Construction.

The Council's executive director is William A. Brenner, AIA.

STATEMENT OF TOM CUNNINGHAM, SENIOR PROJECT MANAGER, R.M. SCHOEMAKER COMPANY, WEST CONSHOHOCKEN, PENNSYLVANIA

Mr. CUNNINGHAM. Good afternoon, Madam Chairman.

My name is Tom Cunningham, with R.M. Schoemaker Company, senior project manager.

The project I'm dealing with is for General Services Administration. It was a Veterans Administration regional headquarters and data center in Philadelphia, Pennsylvania.

The contract amount was a little over $54 million, which was six percent under the government cost estimate.

The scope of work for our particular project was the construction of 41,000 square meters, or 441,000 square feet of a new federal office building for General Services Administration, the largest metric construction project ever built in the United States.

The project is presently 95 percent complete with owner fit-out in progress.

Our company's attitude toward metrification going into the project was basically neutral. However, during the bidding period, many in the local subcontractor community declined to bid the project because of their unfamiliarity with metric.

Despite this, as far as we could determine at bid time, and even more so at this point in the project, there was no significant extra costs incurred because of metric.

Use of metric block was no real cost factor for our masonry subcontractor, although a supplier had to purchase molds, patent the process, and provide test data for the manufacturer of metric block locally to the local standards and specifications.

Use of metric recessed lighting fixtures posed no problem or no significant cost factors or problems for our ceiling installers.

Other metric products such as drywall were competitive as far as price was concerned, but did require significant planning for production runs, delivery and storage so that materials were available when we required them on site.

From R.M. Schoemaker Company's standpoint, and that of most of our subcontractors, metric construction posed no significant construction problems and we would not hesitate and look forward to doing construction in the future under the metric guidelines.

There are areas of the process that need to be brought into line as far design and engineering standards are concerned, but I believe, on the whole, metric is easier to work with than the standards we normally work with today.

Thank you.

Mrs. MORELLA. Thank you, Mr. Cunningham.

Mr. Wright?

[The prepared statement of Mr. Cunningham follows:]

R.M. SHOEMAKER CO.

THOMAS A. CUNNINGHAM, JR.

SENIOR PROJECT MANAGER

METRIC TESTIMONY

THURSDAY, MAY 16, 1996

Project Name/Location: General Services Administration, Veteran's Administration Regional Headquarters Data Center, 5000 Wissahickon Avenue, Philadelphia, PA 19144

Contract Amount: $54,073,000, which was 6% under the government cost estimate

Scope of Work: Construction of a 41,000 square meter (441,000 s.f.) new federal office building for the General Services Administration. The largest metric construction project ever built in the United States. The project is presently 95% complete with Owner fit-out in progress.

Our company's attitude toward metrication going into the project was basically neutral. However, during the bidding period, many in the local subcontractor community declined to bid the project because of their unfamiliarity with metric. Despite this, as far as we could determine at bid time, and even more so at this point in the project, there were no significant extra costs incurred because of metric.

Use of metric block was no real cost factor for our masonry subcontractor, although his supplier had to purchase molds, patent the process, and provide test data for the manufacturer of metric block locally to the local standards and specifications.

Use of metric recess lighting fixtures posed no significant cost factors or any problems for the ceiling installers.

Other metric products such as drywall were competitive as far as price was concerned but did require significant planning for production runs, delivery and storage so the materials were available when required on site.

From R. M. Shoemaker Co.'s standpoint and that of most of our subcontractors, metric construction posed no significant construction problems and we would not hesitate, and look forward to, doing construction in the future under the metric guidelines. There are areas of the process that need to be brought into line as far as design and engineering standards are concerned, but I believe, on the whole, metric is easier to work with than the standards we normally work with today.

STATEMENT OF DAVID WRIGHT, VICE PRESIDENT, UNITED MASONRY INCORPORATED OF VIRGINIA, ALEXANDRIA, VIRGINIA

Mr. WRIGHT. Good afternoon.

United Masonry has been in existence since 1953, is one of the largest masonry specialty subcontractors based in the mid-Atlantic region, and performs work throughout the country.

Our first metric-based job, the Richmond Federal Building, is a multi-phase renovation project and is currently underway. This project was awarded at one-percent below government cost estimates.

In addition, our estimating staff has recently put together a proposal for another metric-based project, an addition to the National Institute for Standards.

From the masonry contractor's perspective, the use of hard metric masonry units presented little difficulty. In fact, once the proper rulers and tapes were obtained, the layout process using metric dimensions is actually simpler than the standard system due to the implicit ease of division and multiplication in base ten units.

The learning curve for our field personnel was relatively quick, with no noticeable loss in productivity.

If soft conversion were utilized on this job, rather than hard, the labor cost to cut and fit around the hard metric doorframes alone would have exceeded any material cost premiums ultimately resulting in a net cost to the owner.

In our local market, suppliers of metric units do exist, but are limited. Like anything, once a sizable market is created, smaller manufacturers will enter the market and, hence, provide contractors with the necessary competitive market place for materials.

As a contractor with experience in a hard metric conversion project, we wholeheartedly support the conversion of federal projects to the hard metric standard. This support is based on the mathematical simplification the metric system provides and the net cost savings realized in the installation of masonry products.

Thank you.

[The prepared statement of Mr. Wright follows:]

TESTIMONY TO THE SUBCOMMITTEE ON TECHNOLOGY PRESENTED BY DAVID WRIGHT

United Masonry has been in existence since 1953, is one of the largest masonry specialty subcontractors based in the mid Atlantic region, and performs work throughout the country. Our first metric based job, The Richmond Federal Building, is a multi phase renovation project, and is currently underway. Interestingly, this project was awarded at 1% below government cost estimates. In addition, our estimating staff has recently put together a proposal for another metric based project, an addition to the National Institute for Standards.

From the masonry contractors perspective, the use of hard metric masonry units presented little difficulty. In fact, once the proper rulers and tapes were obtained, the layout process using metric dimensions is actually simpler than the standard system due to the implicit ease of division and multiplication in base 10 units. The learning curve for our field personnel was relatively quick, with no noticeable loss in productivity.

Difficulties do arise when attempting to use metric units during renovation where new units must be integrated into existing walls. This problem can be overcome by simply allowing the use of standard units where such conditions exist.

In our local market, suppliers of metric units do exist but are limited. Like anything, once a sizable market is created, smaller manufacturers will enter the market and hence provide contractors with the necessary competitive marketplace for materials. Obviously, this conversion for suppliers/manufacturers will broaden the market they are able to participate in, as long as they are able to make the necessary investments in molds or equipment.

As a contractor with experience in a hard metric conversion project, we wholeheartedly support the conversion of federal projects to the metric standard. This support is based on the mathematical simplification the metric system provides and the broadened market for materials that will be facilitated by such a conversion.

Mrs. MORELLA. Thank you, Mr. Wright.

Ms. Young? We'll hear Ms. Young's testimony. Then we'll go over and vote and come back for any brief questioning we may have.

Ms. YOUNG. I should go ahead now?

Mrs. MORELLA. Yes, if you would, please.

Ms. YOUNG. All right. Thank you, Madam Chairman.

STATEMENT OF LORELLE YOUNG, PRESIDENT, U.S. METRIC ASSOCIATION, RANCHO PALOS VERDES, CALIFORNIA

Ms. YOUNG. Good afternoon. The point has been made here many times this morning—being last, I know exactly what's been going on here—that the push which was begun in the Reagan and the

Bush administrations to convert the government to metric usage makes good economic sense.

The federal agencies have been implementing this law for over seven years. And at this time, no action should be taken that would impede their progress.

However, we need to look at the situation with reasonable concern.

Taking action of the type that is proposed in the Cox bill would be a waste of Congress' time and of the taxpayers' money. And it certainly punishes and embarrasses the federal agencies that have faithfully carried out the laws over these seven years.

Congressional interference will only drag things out and increase the cost.

It's important to continue in all of these discussions to look at the big picture. Remember that over 93 percent of the world is metric and the U.S. itself is about half metric.

Our nation's economy requires that we compete in world markets. Exports have accounted for the greatest growth in our economic health in the last decade or so, creating about 19,000 jobs for every $1 billion of goods that we export.

H.R. 2779 will slow our conversion. That is not what we want. It will do damage to our conversion and it will impact our global competitiveness negatively.

None of these are in the nation's best interest.

Construction metrication has been going along smoothly and cost effectively, as has been noted by these gentlemen that spoke before me, thanks to thousands of dedicated professionals, both in the Federal Government and in the private sector.

But H.R. 2779 will not do anything to improve our metrication. It will only increase federal construction costs:

By reducing the government's ability to build logically and efficiently with modular metric products;

By allowing some members of an industry to block the use of products that other members are willing and able to produce at this time; and

By creating more government regulation and red tape and the potential for protracted litigation by aggrieved producers, at a time when both Congress and the Administration are committed to streamlining the government.

The letters sent to the Chair that have been referred to are overwhelmingly in support of metrication. We really know of no firms and organizations that are for this bill.

The Cox bill is only seeking relief for two industries. Yet, the bill is overkill. It attempts to regulate all construction products going into metric construction contracts. They do not need regulating and they do not wish to be regulated.

The Cox bill is the bill that lacks specificity and it is not limited in scope to the problem that it is attempting to solve.

Lastly, overall, H.R. 2779 is not necessary and, again, this has been pointed out many times this morning. There are exceptions within the existing law. They merely need to be visited. They need to be discussed and they need to be used.

This dialogue should be a good solution to the problem. This hearing is a good solution because it gives us a chance to bring all this out into the open.

But we need to solve the problem with the most effective and least costly method and the one that is in the best interests of all of the citizens of our country.

Thank you.

[The prepared statement of Ms. Young follows:]

REMARKS BEFORE THE SUBCOMMITTEE ON TECHNOLOGY

COMMITTEE ON SCIENCE

U.S. HOUSE OF REPRESENTATIVES

BY LORELLE YOUNG,

PRESIDENT, U.S. METRIC ASSOCIATION

H.R. 2779, THE SAVINGS IN CONSTRUCTION ACT OF 1995

THURSDAY, MAY 16, 1996

10 a.m.

2318 RAYBURN HOUSE OFFICE BUILDING

WASHINGTON, DC

I. Background

Current situation: Metric construction already has proven to be a success. Currently, metric construction for federal buildings is proceeding smoothly and cost effectively. The U.S. construction industry, which represents hundreds of different products, is adopting this international modern-measurement technology without difficulty. Contractors report that using the metric system is easier, faster, and far more efficient than using the inch-pound system.

Economic need: Our nation's economy requires that the U.S. convert to metric system usage in order to increase competitiveness in world markets. Passage of our current metric laws was a visionary step by Congress which recognized the economic advantages to be gained by metric system usage in U.S. trade and commerce. Advantages that will benefit the entire nation, expand out economy and create more jobs. And Congress also recognized the costs incurred in delaying metrication, including loss of world markets and a negative U.S. trade balance.

An effective solution: To avoid unintended harm to U.S. firms, a provision was included in the amended metric act requiring all federal agencies to begin using the metric system in procurements, grants, and other business-related activities, *except when such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms.* This provision would allow companies to achieve relief from metric requirements in specific instances, but would not impede the overall progress of the United States toward gaining the full benefits of metric trade and commerce.

The mechanism already exists to address the concerns of the National Concrete Masonry Association and the National Electrical Manufacturers Association. According to the provisions of the law, a dialogue *has been* initiated between the concerned parties to develop an administrative policy which will solve their problems. These negotiations would be the most effective and least costly method to resolve this matter.

A solution that creates problems: Instead of using the "exceptions clause" to work out a satisfactory compromise with these two industries, H.R. 2779 proposes a complicated structure of advisory committees which would regulate the usage of metric products in federal construction. The bill extends far beyond the concerns of the two affected industries, and by its very nature would have the effect of slowing the U.S. metrication progress. Any step taken to delay this change needs to be weighed very carefully against the overall benefits to the country as a whole that will accrue from

an expeditious conversion to the metric system. In any transition, issues arise that need solution. In this case, a far better way already exists to resolve the concerns of the concrete block and modular lighting industries than through legislation.

II. H.R. 2779, the Savings in Construction Act of 1995.

A close examination of this bill reveals that in *many ways* it creates more problem than it solves.

Over-regulation of the private sector: H.R. 2779 would result in over-regulation of private sector activities through an extensive federal bureaucracy. Although H.R. 2779 was drafted to address the concerns of *only two* trade associations representing the concrete block and recessed lighting fixture companies, it is not confined to these two industries, which, in total comprise something less than 2% of construction costs. Instead, it proposes a costly and complicated system of advisory committees in the federal agencies for each of the industries supplying construction products. It extends far beyond the block and lighting industries to companies and contractors who do not wish to be regulated. This extensive system of regulation is not necessary, when virtually all construction industry organizations support metric construction, and product problems have been minimal.

Disregards free-market choice: Further, it interferes with free-market choice and it could pose a costly burden on companies/industries already converted to metric usage. Many contractors would not agree with the findings of these trade association representatives that the bill proposes to empower as the decision makers, regarding what, and when, metric products can be specified. This situation could even open the door to litigation from contractors and companies who suffer economic loss from delays caused by the decision whether or not to use metric products in a specific project.

Bureaucratic burden: This additional bureaucratic burden runs counter to the philosophy of the Administration and the Congress who are committed to streamlining government. Both are committed to scaling down bureaucracy and reducing regulations on the private sector. This bill does exactly the opposite.

Major departure from present procurement law: H.R. 2779 also runs counter to federal procurement law. It establishes unwise precedents in procurement law by its procedures for determining when the federal government can buy metric products.

Ignores product standards: Most of the major voluntary U.S. product-standards writing organizations are committed to drafting all new standards using metric units, to bring them into conformity with international standards. Increasingly, companies are producing their goods to meet the requirements of these international metric product-standards to enhance acceptance of their products worldwide. Even in domestic-only industries, metric standards are beginning to appear because national standards are being "harmonized" or brought into agreement with metric international standards. It is impossible to ignore the fact that the need to compete in today's global marketplace is causing many changes in established business practices.

Immediate relief cannot be achieved: If the intent of this bill is to bring immediate relief from metric requirements to these two industries, this is not the way to achieve it. Regulations and conflict of interest protections might take years to put in place. A reasonable solution could be worked out more quickly by using the "exceptions clause."

Harms U.S. metrication: Lastly, and most importantly, it does damage to the cause of U.S. metrication. The push, begun in the Reagan and Bush administrations, to convert the government to metric usage makes economic sense. Federal agencies have been implementing this law for over seven years, and this is not the time to introduce initiatives to reverse or impede their progress. This would be a waste of Congress' time and taxpayer's money.

The U.S. Metric Association is a nonprofit organization, dedicated to promoting the transition to metric system usage by the United States. It provides industry, education, government and consumers with metric information and presents private sector concerns at the government's metric transition planning meetings. Its headquarters are located at 10245 Andasol Avenue, Northridge CA 91325.

Mrs. MORELLA. Thank you, Ms. Young.

Can you stay with us a little bit longer? We'll go over and vote and then we'll come back.

Mr. TANNER. Madam Chairman, the coalition budget is next on the floor and I'm going to be speaking on that, so I won't be able to return.

But I wanted to just, if I may, to thank the panel for being here this morning and for their testimony, your time and expense in coming here.

We appreciate it.

Mrs. MORELLA. I suppose that, rather than holding you, I could wrap it up, then. I know he's got an important budget that he's got to comment on and handle on the floor.

I think the concern—first of all, please know that by having this hearing, this bill did not go out in the corrections calendar. It could have just like that. But we really felt that it needed more because maybe something could be worked out.

My hope has been that we could work out a solution with industry, those companies particularly that are affected, obviously, and the Administration, whether or not to clarify the exceptions clause or do something administratively.

I hear that there's been an impediment to it. And maybe, Mr. Bohannon, you'd be pretty candid about why is there an impediment? Why can't something be done? And do you think something can be done?

Mr. BOHANNON. We certainly want to do everything we can to make sure that the law is implemented the right law. And the law envisioned, as we move toward a metric policy for this country, looking at the possible inefficiencies.

That is very clearly in the law, and we certainly believe that we've taken some initial steps that we can build on. We want to continue our dialogue with the industry on how we can be helpful in responding to this.

But I believe that, given where 2779 would take us, we need to focus on how an administrative remedy would be better applied rather than trying to think about whole new legislation which would in fact, I think, set us back many, many years.

Mrs. MORELLA. Would any of the others of you like to comment on that at all?

I know you said that you don't see that there are going to be cost savings with the legislation, that you don't think it is necessary, that metrication should be moving ahead appropriately, that the bill lacks specificity. All of those things have come out in your testimony.

Industry has said just the opposite.

Do you think we can work out a solution? You've got to recognize that they are looking for some flexibility because they don't do that kind of exporting.

Mr. BRENNER. Well, I believe we can. But I'd like to state that we've worked pretty closely with the block people, particularly, in the last few years.

Unfortunately, both the block industries and the lighting industries have said no hard metric, period. So there's not been a chance to compromise on these issues. And that is what has led to this bill.

Compromising implies something on both sides.

Mrs. MORELLA. Well, I'm going to have to go vote. And I do want to thank you very much for being here, for your testimony, your expertise, and for waiting so long, too, your patience.

Thank you. There will be other questions that may be submitted to you because this is not the end of this issue, and so we will be in touch.

Mr. BOHANNON. Any way that we can work with you, Chairman Morella, we'd be glad to do so.

Mrs. MORELLA. Thank you, Mr. Bohannon. I thank the panel.

I understand Mr. Brenner is even a constituent.

[Laughter.]

[Whereupon, at 12:32 p.m., the hearing was concluded.]

[The following material was received for the record:]

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
May 20, 1996

Honorable Constance A. Morella,
Chair, Subcommittee on Technology,
Room 2319 Rayburn H.O.B.,
U. S. House of Representatives,
Washington, DC 20515

DEAR CHAIRWOMAN MORELLA:

I am writing to express the concerns of the National Society of Professional Engineers (NSPE) regarding H.R. 2779, which proposes changes to the Metric Conversion Act of 1975 (P.L. 100-418).

NSPE was founded in 1934 and represents over 69,000 professional engineers in 500 local chapters and 52 state and territorial societies. NSPE is a broad-based disciplinary society representing all technical disciplines and all areas of engineering practice, including government, industry, education, private practice, and construction.

NSPE has long been a strong supporter of the use of the Metric System of Measurements. The initial version of our policy in support of metric was adopted in 1972. It has been revised periodically, and a copy of the current version, NSPE Professional Policy 102E, Conversion to Metric System, is attached.

Our concern with H.R. 2779 is that it may be poorly crafted, and that it may have unintended consequences in terms of the long range goal of advancing the use of the metric system of measurements. We fear that the bill has not received adequate study and input from a cross-section of industrial, technical and professional organizations. Groups of our members, who are knowledgeable on this issue, are studying H.R. 2779, as well as our own policy, with a view to the recommendation of possible revisions to both.

We urge you to proceed with great caution on any proposed revision, and will share the results of our research and recommendations as soon as they are available. We believe that the best interests of all, including those supporting the present bill, will be best served by encouraging thoughtful evaluation and input from the affected entities. We are well aware of the concerns which prompted the bill and it is not our purpose to belittle them; rather, we submit that changes in public policy require broader consideration than this bill has received.

Sincerely,

CYDE R. TIPTON, JR., *President*

PP NO. 102-E—CONVERSION TO METRIC SYSTEM

The National Society of Professional Engineers, recognizing the technical and economic advantages inherent in the use of the metric system of measurement, endorses the policy embodied in P.L. 94-168 (Metric Conversion Act of 1975) as amended by Section 5164, P.L. 100-418 (Omnibus Trade and Competitiveness Act of 1988). The 1988 amendment declared that by the end of fiscal year 1992, U.S. Federal agencies are to use the metric system of measurement in their procurement, grants, and other business-related activities. In implementing the policy as stated in P.L. 100-418, NSPE supports full compliance with the International System of Units (SI) of the International Bureau of Weights and Measures as adopted by the National Institute of Standards and Technology (NIST).

Implementation of the metric system by the Federal Government and U.S. industry will improve the ability of the United States to compete in the global market-

place and assist in reducing the foreign balance of trade deficit. This action will eventually assist many U.S. citizens in improving their quality of life.

NSPE supports the goals relative to implementation of the metric system set forth in the conference report on P.L. 100-418, the Federal government's implementation plan and its scheduled fulfillment dates as outlined in P.L. 100-418.

NSPE strongly urges each member, Chapter, State Society, and Practice Division to support the Federal Government's initiative and efforts to implement the metric system within the United States. In addition, members are urged to provide leadership in the education and training to assist the U.S. private sector in the rapid conversion to the metric system.

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